

THE UNITED STATES OF AMERICA

SUPREME COURT OF THE UNITED STATES

Writ of Habeas Corpus

No. 1000

AMERICAN HYDRO-PNEUMATIC AND ELECTRICAL
FACTURING COMPANY, PETITIONER

FREDERICK M. BARNETT and JOHN BARNETT, RESPONDENTS

IN SENATE, FEBRUARY 1, 1907

(25,050)

2079
SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1916.

No. 323.

ABERCROMBIE & FITCH COMPANY AND JUSTRITE MANUFACTURING COMPANY, PETITIONERS,

vs.

FREDERIC E. BALDWIN AND JOHN SIMMONS COMPANY.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SECOND CIRCUIT.

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a United States Circuit Court of Appeals, for the Second Circuit.

FREDERIC E. BALDWIN and JOHN SIMMONS COMPANY, Complainants-Appellees,
against

ABERCROMBIE & FITCH COMPANY and JUSTRITE MANUFACTURING COMPANY, Defendants-Appellants.

TRANSCRIPT OF RECORD.

Appeal from the District Court of the United States, for the Southern District of New York.

United States Circuit Court of Appeals, Second Circuit. Filed April 22, 1915. William Parkin, Clerk.

1 *Amended Bill of Complaint.*

United States District Court, Southern District of New York.

In Equity.

FREDERIC E. BALDWIN and JOHN SIMMONS COMPANY, Intervenor, Plaintiffs,

vs.

ABERCROMBIE & FITCH COMPANY, and JUSTRITE MFG. COMPANY, Intervenor, Defendants.

The plaintiff, Frederic E. Baldwin, for his amended bill of complaint alleges:

First. That the plaintiff Frederic E. Baldwin, is a citizen of the State of New York, and resident and inhabitant of the Borough of Manhattan, City, County and State of New York; that the plaintiff, John Simmons Company, is a corporation organized and existing under the laws of the State of New York, and a resident and inhabitant of said Borough of Manhattan; that the defendant, Abercrombie & Fitch Company, is a corporation duly organized and existing under and by virtue of the laws of New York and a citizen of said State, having its principal and a regular and established place of business in, and a resident and inhabitant of said Borough of Manhattan, City, County and State of New York; and that the Justrite Mfg. Company is a corporation duly organized and existing under and by virtue of the laws of the State of Illinois, a citizen of said State having a regular and established place of business in, and a resident and inhabitant of, Chicago, County of Cooke, in said State of Illinois.

Second. That the jurisdiction of this court depends upon the patent laws of the United States.

Third. That plaintiff (Frederic E. Baldwin) being, prior to October 18, 1899, the first, original and sole inventor of certain improvements in Acetylene Gas Lamps not known or used by others in this country before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his said application, and which had not been for more than two years prior to said application in public use or on sale in this country, and which had not been first patented or caused to be patented by him or his legal representatives or assigns in a foreign country upon an application filed more than seven months prior to the filing of said application in this country for said Letters Patent, and which had not been abandoned, filed an application for Letters Patent for the said invention and having complied in all respects with the requirements of the law, Letters Patent of the United States were on the 28th day of August, 1900, duly granted to him bearing No. 656,874.

Fourth. That said plaintiff being, prior to July 15, 1903, the first, original and sole inventor of certain improvements in Acetylene

Gas Generating Lamps which had not been known or used
3 by others in this country before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his said application, and which had not been for more than two years prior to said application in public use or on sale in this country, and which had not been first patented or caused to be patented by him or his legal representatives or assigns in a foreign country upon an application filed more than twelve months prior to the filing of said application in this country for said Letters Patent, and which had not been abandoned, filed an application for Letters Patent for the said invention and having complied in all respects with the requirements of the law, Letters Patent of the United States were, on the 22nd day of May, 1906, duly granted to him, bearing No. 821,580.

Fifth. That said patent being inoperative and invalid by reason of a defective and insufficient specification arising from inadvertence, accident and mistake, and without any fraudulent or deceptive intent, said plaintiff, on February 5, 1913, duly surrendered the said letters patent, and applied for a re-issue thereof in due form of law, and that on the 11th day of March, 1913, all the requirements of the statutes then in force having been complied with, letters patent of the United States reissue No. 13,542, were duly granted to said plaintiff.

Fifth (A). That the plaintiff, John Simmons Company, is and
4 has been, since about the year 1908, the only manufacturer of acetylene gas lamps for miners' use embodying the inventions of said original and reissued letters patent, is the only licensee thereunder, and is now and has been for the past two years the only authorized selling agent for said lamps.

Sixth. That a large number of Acetylene Gas Lamps embodying the inventions of each of said letters patent have been made and sold, all of which Lamps were duly marked "Patented," together with the dates of said Letters Patent of which the plaintiff Frederic E. Baldwin is now and has been since their respective grants the sole owner.

Seventh. The Abercrombie & Fitch Company (and Justrite Mfg. Company, and each of them), has infringed upon each of said Letters Patent, since the dates of each of said letters patent and prior to, and within six years of the filing of this bill, and particularly claims 1 and 10 of the said Letters Patent No. 656,874, and claims 1 and 4 of said reissue letters patent No. 13,542, by making or causing to be made, using or causing to be used, and selling or causing to be sold, in the Borough of Manhattan, New York City, within the Southern District of New York, and elsewhere in the United States, Acetylene Gas Lamps, made in accordance with and embodying the inventions set forth in said claims of said Letters Patent, without the consent of the plaintiffs, and are continuing so to do, and have derived unlawful gains and profits from such infringement which plaintiffs would otherwise have received and have thereby been caused irreparable damage.

Wherefore, plaintiffs pray for writs of injunction, as well provisional as permanent, issuing out of and under the seal of this court, enjoining and restraining the defendants, Abercrombie & Fitch Company and Justrite Mfg. Company, their and each of their officers, directors, clerks, servants, agents and workmen from infringing upon said letters patent and each of them; that each of said defendants account to each said plaintiff for the profits made by them and each of them, and the damages sustained by each plaintiff, and that upon rendering a decree herein, the actual damages so assessed be trebled, in view of the wilful and unjust infringement by the said defendants; that the plaintiffs recover the costs and disbursements of this suit; and plaintiffs pray for such other and further relief as may appear proper and be agreeable to equity.

FREDERIC E. BALDWIN,

By PHILIPP, SAWYER, RICE & KENNEDY,

Solicitors for Plaintiff, Frederic E. Baldwin,

220 Broadway, Manhattan, N. Y.

JAMES O. RICE,

Of Counsel for Plaintiffs.

The foregoing amended bill of complaint is hereby adopted by the John Simmons Company, Intervenor, pursuant to the annexed order.

JOHN SIMMONS CO.,

By PHILIPP, SAWYER, RICE & KENNEDY,

Solicitors for Intervenor, John Simmons Company,

220 Broadway, Manhattan, N. Y.

Amended Answer.

United States District Court. Southern District of New York.

In Equity.

FREDERIC E. BALDWIN and JOHN SIMMONS COMPANY, Intervenor,
Plaintiffs,

vs.

ABERCROMBIE & FITCH COMPANY, and JUSTRITE MFG. COMPANY,
Intervenor, Defendants.

Amended Answer to Amended Bill of Complaint.

To the Honorable the Judges of the United States District Court for
the Southern District of New York.

The Justrite Mfg. Co., admitted as a party defendant in the above entitled suit, states that it is a corporation organized and existing under the laws of the State of Illinois and doing business in the City of Chicago, and County of Cook in the said State, answering the Bill of Complaint filed by the plaintiff, defendant answering says:

First. This Defendant on information and belief avers that the Complainant, Frederic E. Baldwin, is not entitled to sue for injunction or damage herein, as said complainant is not engaged in the manufacture or sale of any article containing his alleged patented invention, and on like information and belief this defendant avers that said complainant, for certain royalties to him reserved, has licensed for the full term of his said alleged patent and for the United States, the John Simmons Manufacturing Company to manufacture and sell and to license others to manufacture and sell the said patented inventions, and that on the 12th day of August, 1912, the said John Simmons Manufacturing Company, in consideration of a license from this defendant to use patent No. 688,926, issued to Alvin L. Buffington, (and by him assigned to the Justrite Mfg. Co.) and the payment by said John Simmons Manufacturing Company to this defendant of the sum of Five Thousand (\$5000.00) Dollars, released to this defendant and to all persons acting or claiming under said alleged patents, and that during the said month of August the president Frederick J. Becker, and Harry Lea Dodson, attorney of the Defendant, The Justrite Manufacturing Company, called upon Mr. Charles Simmons, the president of the John Simmons Company, plaintiff, and that the said Dodson at that time and in the presence of Mr. Charles Simmons and Mr. Becker made a pencil memorandum setting out the details of the agreement as above set forth, entered into between the parties, that a short time thereafter Mr. J. Q. Rice, one of the attorneys for the plaintiffs came into the matter for the purpose of preparing formal documents embodying the terms of agreements entered into

between Mr. Charles Simmons for and in behalf of the John Simmons Company, and Mr. Frederick J. Becker, for and in behalf of the Justrite Manufacturing Company, that the said Rice attempted to embody in the agreement many things which the Defendant had never agreed to, and that a number of papers were prepared, and

each and every one of which set forth the consideration as
8 above stated but contained many covenants which this defendant had never made nor agreed to make, and that thereupon to wit, on or about the 1st day of May 1913, the defendant, The Justrite Manufacturing Company relying on Mr. Charles Simmons, acting for the John Simmons Manufacturing Company, sending the release as his part of the said agreement existing between the parties, and in order to fulfill its duties forwarded a formal license.

Second. Answering the 3rd Clause of plaintiff's Bill of Complaint, this defendant admits upon information and belief that Letters Patent of the United States No. 656,874, bearing date of the 28th day of August, 1900, for certain alleged improvements in acetylene lamps, were issued to plaintiff, but this defendant denies that the plaintiff was the original, sole and first inventor of the alleged improvement sought to be claimed in and by said Letters Patent; denies that said improvements had not been known or used by others before said Frederic E. Baldwin's pretended invention thereof, denies that the same had not, before such pretended invention, been patented or described in any printed publication, in this or any foreign country; denies that the same had not been in public use or on sale for more than two years prior to the application for said Letters Patent; and denies that said Letters Patent are valid or effectual to secure to the said Frederic E. Baldwin his heirs, administrators, executors or assigns, the exclusive right, or any right whatever, of making use, or selling to others to be used, the alleged improvements as set forth in the said Letters Patent, and particularly denies the validity of the invention as described in
9 the 1st and 10th claims of the said Letters Patent.

Third. And this defendant further answering denies that the said alleged invention as described in the 1st claim is useful or that it is an improvement, and advance in this art, but on the contrary thereof, this defendant avers and charges the fact to be that said 1st claim of the said Letters Patent is null and void for want of utility and also for the further and separate reason, for want of invention on the part of the said Frederic E. Baldwin.

Fourth. This defendant further answering the 4th Clause of Plaintiff's Bill of Complaint admits upon information and belief that Letters Patent of the United States No. 821,580, bearing date of the 22nd of May, 1906, for certain alleged improvements in acetylene lamps were issued to plaintiff, but this defendant denies that the plaintiff was the original, sole and first inventor of the alleged improvement sought to be claimed in and by said Letters Patent; denies that said improvements had not been known or used by others before said Frederic E. Baldwin's pretended invention thereof; denies that the same had not, before such pretended invention, been

patented or described in any printed publication, in this or any foreign country; denies that the same had not been in public use or on sale for more than two years prior to the application for said Letters Patent; and denies that said Letters Patent are valid or effectual to secure to the said Frederic E. Baldwin, his heirs, administrators, executors or assigns, the exclusive right, or any
10 right whatever, of making use, or selling to others to be used, the alleged improvements as set forth in the said Letters Patent, and particularly denies the validity of the invention as described in the 1st and 4th claims of the said Letters Patent.

Fifth. And this defendant further answering denies that the said alleged invention as described in the 2nd claim is useful or that it is an improvement and advance in this art, but on the contrary thereof, this defendant avers and charges the fact to be that the said 1st claim of the said Letters Patent No. 821,580 is null and void for want of utility, and also for the further and separate reason, for want of invention on the part of the said Frederic E. Baldwin.

Sixth. This defendant denies that it has ever made, used, or vended to others to be used, the said alleged invention, or any substantial part thereof, and denies that it has ever made, vended, or vended to others to be used, any device in acetylene lamps made according to, or employing said alleged invention, or any substantial part thereof, and denies that it has in any way infringed or violated the plaintiff's privileges in this behalf, or that it intends so to do, or that it has received or enjoyed any gains or profits therefrom, or has caused any injury or loss to the plaintiff.

Seventh. Defendant further answering says that it is now, and has been for several years past, engaged in the manufacturing, selling and introducing into use acetylene gas lamps, and that
11 the lamps thus made were made in accordance with the description and drawings embodying the invention of Augie L. Hansen, described in Letters Patent No. 42,460, and dated May 7, 1912, as the assignee of the entire right, title and interest in the invention of the said Augie L. Hansen, above named.

Eighth. Defendant further answering states that the portion of the said lamp alleged to be covered by the 1st claim of the said Patent No. 656,874, does not embody the said construction, but is the invention of Ludwig Schmitt, of Mannheim, Germany, the description of which was published in his British Patent No. 15,688, of July 1898, which was duly published in the United States, and became public property long prior to the application for patent by the said Frederic E. Baldwin.

Ninth. And this defendant answering says that the said Frederic E. Baldwin was not the sole or original inventor of the alleged invention and improvement described by him as new in the 10th claim of Letters Patent No. 656,874, but affirms that the same, or all material parts thereof, were prior to the supposed invention thereof by the said Baldwin, well known to one Leroy S. Buffington, of Minneapolis,* Minn., and embodied in a lamp constructed and by him publicly used at that time, and which he still has properly attested and witnessed; and that the subject matter of the last claim

as well as the 10th claim of said patent was well known to Thomas F. Williams, of Chicago, Ill., and practiced by him, and by various other persons whose names are unknown to this defendant, but which this defendant prays leave to insert herein and make a part hereof when they shall be discovered, and the defendant further denies the validity of the said Letters Patent for the reason that the said claim was held invalid by the Circuit Court of Appeals of the Sixth District in a decision reported in Vol. 199 Fed. Rep. p. 133; and this defendant further answering avers the fact to be that the said Frederic E. Baldwin was not the first and original inventor of the said alleged improvement in acetylene gas lamps described in the 1st and 10th claims of Letters Patent No. 656,874 and the 1st and 4th claims of Letters Patent No. 821,580, but on the contrary thereof that the same thing in all material and essential features, and the same principle and combination, was, previous to the said alleged invention of the said Frederic E. Baldwin, fully described and set forth in the Letters Patent, both of the United States and foreign countries, long prior to the alleged invention of discovery by the said Frederic E. Baldwin, the said Letters Patent being hereinafter enumerated as follows:

United States Patents.

Buffington	614,438,	Nov. 22, 1898,
Harvey	614,652,	Nov. 22, 1898,
Laun, et al.	627,303,	June 20, 1899,
McMurray	599,347,	Feb. 22, 1898,
Stein	599,270,	Feb. 15, 1898,
Casgrain	574,601,	Jan. 5, 1897,
Strakosch	610,150,	Aug. 30, 1898,
Dolan	621,331,	Mar. 21, 1899,
Hallows, et al.	644,910,	Mar. 6, 1900,
Bundy	608,571,	Aug. 9, 1898,
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Moreau	624,068,	May 2, 1899,
Williams	618,594,	Jan. 31, 1899,
Watt	662,842,	Nov. 27, 1900,
Gallagher	597,900,	Jan. 25, 1898,
Whittemore	595,230,	Dec. 7, 1897,
Villejean, et al.	600,563,	Mar. 15, 1898,
Rand	582,548,	May 11, 1897,
Peck	622,015,	Mar. 28, 1899,
Bundy	616,889,	Jan. 3, 1899,
Kidd	332,087,	Dec. 8, 1895,
Crary	643,111,	Feb. 13, 1900,
Zimmermann	634,319,	Oct. 3, 1899,
Waibel, et al.	625,943,	May 30, 1899,
Kerr	596,937,	Jan. 4, 1899,
Hull	633,844,	Sept. 26, 1899,
Bellamy	592,759,	Nov. 2, 1897,
Pourcelle	627,139,	June 20, 1899,

Gallagher	585,642,	June 29, 1897,
Hanotier, et al.	599,098,	Feb. 15, 1898,
Russell	635,599,	Oct. 24, 1899,
Iden	637,934,	Nov. 28, 1899,
Strakosch	628,964,	July 18, 1899,
Parkhurst	642,559,	Jan. 30, 1900,
Dupée	592,083,	Oct. 19, 1897,
Watt	638,898,	Dec. 12, 1899,
Williams	619,814,	Feb. 21, 1899,
Baulieu	611,885,	Oct. 4, 1898,
Handshy	591,132,	Oct. 5, 1897,
Stearns, et al.	629,309,	July 18, 1899,
Dolan	638,449,	Dec. 5, 1900,

British Patents.

Holliday	24,360,	of Oct. 21, 1897,
Schmitt	15,688,	of July 18, 1898,
Schmid	26,676,	of Nov. 15, 1897,
Van Praag	2,227,	of Jan. 31, 1899,

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Van Praag	21,691,	of Oct. 14, 1898,
Windham	20,537,	of Sept. 7, 1897,
No name	16,399,	No date,
Marechal, et al.	29,405,	of Dec. 11, 1897,
Buffington	23,802,	of Oct. 15, 1897,
Strakosch, et al.	9,718,	of Apr. 27, 1898,
Schumacher	30,134,	of Dec. 31, 1896,
Barratt	2,699,	of Feb. 7, 1899,
Davison, et al.	1,549,	of Jan. 19, 1898,
Miller, et al.	17,997,	of Aug. 22, 1898,
Bridges	14,984,	of July 20, 1899,

French Patents.

Ripicaud	270,623,	Jan. 10, 1898.
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Swedish Patents.

Buffington	10,259,	Mar. 15, 1898.
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Tenth. The defendant answering the 5th paragraph of the said Bill of Complaint denies that the said original Letters Patent No. 821,580 were or contained the proper grounds for a reissue, but affirms that the said reissue patent No. 13,542, is invalid by reason of the fact that the 1st and 4th claims of the said original patent No. 821,580 were held invalid by the United States Circuit Court of Appeals of the Sixth District in a decision reported in Vol. 199, Fed. Rep. P. 133; and for the further reason that the said application for reissue was not made until seven years after the issuance of said original Letters Patent, and therefore, said reissue was invalid due

to the intervening rights which had accrued to the defendant and others to wit:

Norgard Mfg. Co., Des Moines, Iowa.

Maple City Mfg. Co. Monmouth, Illinois.

15 Bleser Mfg. Co., Springfield, Illinois.

Seranton Lamp Co., Seranton, Pennsylvania.

Grier Bros. Mfg. Co., Pittsburg, Pa.

Eleventh. And the Defendant further shows to the Court that it is claimed by the plaintiff herein that the Court of Appeals for the Sixth Circuit sustained Claim 1 of said Patent No. 656,874 in its judgment and decree, as reported in Vol. 199 Fed. Rep., P. 133. This defendant, however, shows to the Court that the only patents cited in the trial and hearing of said Cause, or considered by the Court were as follows:

Handshy.....	591,132,	Oct. 5, 1897,
Dolan.....	638,449,	Dec. 5, 1899,
Hallows, et al.....	644,910,	Mar. 6, 1900,

and that the patents cited herein were not before the Court. A careful examination and analysis of the Court's decision in said cause will show that the minimum of patentable novelty referred to by the Court had reference to the projection of the wire passing through the water tube into the carbide below, thus regulating the flow of water, and constituted the meager invention which led the Court to say:

"This claim presents the minimum of patentable novelty."

and the defendant avers that an inspection of the Letters Patents last referred to will show that this invention was not new, but had been anticipated by said patents and was well known in the art, and that said citations show that there was no element that

16 could be declared to be new in the said Baldwin invention.

Twelfth. And this defendant further answering plaintiff's Bill of Complaint shows to the Court that the said Letters Patent, and particularly as to claims 1 and 10 of Letters Patent No. 656,874, and the 1st and 4th claims of Letters Patent 13,542 are invalid upon their face by reason of the disclosure contained in the Letters Patent of the United States and Great Britain, Sweden and France hereinbefore enumerated.

Thirteenth. This defendant answering the 8th clause of Complainant's Bill of Complaint denies that it has in any manner infringed either of said Letters Patent mentioned in plaintiff's Bill of Complaint, and denies that, this plaintiff has any right to any further answer to its Bill of Complaint and denies that the plaintiff is entitled to any injunction, damages, account or any other relief whatever against this defendant, injunctive or otherwise.

Wherefore this defendant prays that said bill be dismissed, and for all proper relief.

JUSTRITE MANUFACTURING COMPANY,
By FREDERICK J. BECKER, *President.*

WILLIAM M. CHADBOURNE,
Solicitor for Defendant.
CHARLES H. ALDRICH,
HARRY LEA DODSON,
Of Counsel.

17 STATE OF ILLINOIS,
County of Cook, ss:

Frederick J. Becker, being first duly sworn, deposes and says that he is the President of the Justrite Mfg. Co., that he has read the foregoing answer and knows the contents thereof and that the same is true except as to those matters stated to be on information and belief and as to such matters he believes them to be true.

FREDERICK J. BECKER.

Sworn to and subscribed before me this 10th day of December, 1913.

C. M. BAUMEISTER,
Notary Public.

18 *Stipulation.*

United States District Court, Southern District of New York.

In Equity.

FREDERIC E. BALDWIN, Plaintiff,
against
ABERCROMBIE & FITCH COMPANY, Defendant.

It is hereby stipulated between the solicitors for the complainant in the above entitled suit and the solicitor for the defendant, Abercrombie & Fitch Company, that Abercrombie & Fitch Company need file no separate answer to the bill of complaint in this suit, but that it may adopt the answer filed this day in this suit of Justrite Manufacturing Company and rely thereon with the same force and effect as if it had filed an answer in form and substance similar to the said answer on the Justrite Manufacturing Company.

Dated New York, June 28, 1913.

PHILIPP, SAWYER, RICE & KENNEDY,
Solicitor for the Complainant.
WILLIAM M. CHADBOURNE,
Solicitor for Defendant, Abercrombie & Fitch Company.

19 *Petition of John Simmons Co. to Intervene.*

United States District Court, Southern District of New York.

In Equity.

FREDERIC E. BALDWIN, Plaintiff,
against
ABERCROMBIE & FITCH COMPANY, Defendant.

The defendants will please take notice that the annexed petition will be brought on for hearing on the Motion Calendar on October 10, 1913, at the opening of court on that day, or as soon thereafter as counsel can be heard.

Dated, New York, October 2nd, 1913.

PHILIPP, SAWYER, RICE & KENNEDY,
Counsel for Petitioner, John Simmons Company.

To William M. Chadbourne, Esq., Solicitor for Abercrombie & Fitch Company and Justrite Mfg. Co., 32 Liberty Street, New York City, N. Y.

20 *United States District Court, Southern District of New York.*

In Equity. E-10/219.

FREDERIC E. BALDWIN, Plaintiff,
against
ABERCROMBIE & FITCH COMPANY, Defendant.

Petition of the John Simmons Company to Intervene and be Made Complainant.

To the Honorable the Judges of the District Court of the United States for the Southern District of New York:

Your Petitioner, the John Simmons Company, respectfully shows unto your Honors:

That it is a corporation organized and existing under the laws of the State of New York, having its principal place of business in the Borough of Manhattan, in the City and County of New York, in said State, and is engaged in the manufacture and sale of acetylene lamps, including such as are covered by the patents here in suit, under which said patent it has a license.

That, on or about the 20th day of May, 1913, Frederic E. Baldwin (petitioner's licensor) filed his bill of complaint in equity in this court against Abercrombie & Fitch Company, charging it with infringement of United States Letters Patent No. 656,874, dated

21 August 28, 1900, granted to said Frederic E. Baldwin, for improvements in acetylene gas lamps, and United States Re-issue Letters Patent No. 13,542, dated March 11, 1913, for improvements in acetylene gas lamps.

That on or about June 26, 1913, the Justrite Mfg. Co. a corporation organized and existing under the laws of the State of Illinois, and having its principal place of business at the City of Chicago, County of Cook, in said State, petitioned this Court for leave to intervene as a defendant for the reason that, as alleged in its said petition, it was informed and believed that it manufactured and sold to the said defendant, Abercrombie & Fitch Company, the acetylene gas lamps for the manufacture and sale of which suit was brought.

That said motion of said Justrite Mfg. Co. to intervene was granted on or about June 26, 1913.

That, on or about June 28, 1913, the answer of said intervenor, Justrite Mfg. Co., was filed herein.

That, on or about June 28, 1913, a stipulation was entered into between the Solicitor for said Frederic E. Baldwin and said Justrite Mfg. Co. that said Abercrombie & Fitch Company file no separate answer herein, but might adopt the answer of said Justrite Mfg. Co.

That in the answer of said Justrite Mfg. Co., the following averment is made:

First. This defendant on information and *behalf* avers that the complainant is not entitled to sue for injunction or damage herein, as said complainant is not engaged in the manufacture or sale of any articles containing his alleged patent invention, and on like information and belief this defendant avers that said complainant,

22 for certain royalties to him reserved, has licensed for the full term of his said alleged patent and for the United States, the John Simmons Manufacturing Company to manufacture and sell and to license others to manufacture and sell the said patented inventions, and that on the 12th day of August, 1912, the said John Simmons Manufacturing Company, in consideration of a license from this defendant to use patent No. 688,926, issued to Alvin L. Buffington, (and by him assigned to the Justrite Mfg. Co.) and the payment by said John Simmons Manufacturing Company to this defendant of the sum of Five Thousand (\$5,000.00) Dollars, released to this defendant and to all persons acting or claiming under this defendant all right of action for damages or other relief under said alleged patents."

Your Petitioner further shows to your Honors, that for many years last past it has been the only manufacturer of the inventions of said plaintiff, Frederic E. Baldwin, including the inventions in said Letters Patent No. 656,874 and Reissued Letters Patent No. 13,542, under license from said Frederic E. Baldwin, the owner of the said Letters Patent.

That any recoveries against said defendants, Abercrombie & Fitch Company and Justrite Mfg. Co., would probably be a small part of the actual damages and profits caused by the infringements complained of, unless your Petitioner is permitted to intervene herein.

23 That if recovery be had in said suit without your petitioner being a party thereto, it will necessitate the beginning of a new action by said petitioner for the purpose of recovering damages and profits caused by the infringement hereinbefore complained of against said defendant Abercrombie & Fitch Company,

and the intervening defendant Justrite Mfg. Co., because it is not a party to such action.

Wherefore, your petitioner, believing itself to be a party having such united interest in the subject of action and in obtaining the relief demanded in order to a complete determination of the action, prays that it may be allowed to intervene in the above entitled action of Frederic E. Baldwin against Abercrombie & Fitch Company, and be made a plaintiff therein, with leave to file its bill of complaint in all respects as it might have had petitioner originally filed its bill of complaint jointly with said Frederic E. Baldwin against said Abercrombie & Fitch Company and said Justrite Mfg. Co.

(Sgd.)

JOHN SIMMONS CO.

By CHAS. H. SIMMONS, *Prest.*

PHILIPP, SAWYER, RICE & KENNEDY,
Solicitors and of Counsel for Petitioner,
220 Broadway, Borough of Manhattan,
New York City, New York.

JAMES O. RICE,
of Counsel.

24 STATE OF NEW YORK,
County of New York, ss:

Charles H. Simmons, being duly sworn, deposes and says that he is the President of the John Simmons Company, the above named petitioner, that he has read the foregoing petition and knows the contents thereof, and that the same is true of his own knowledge except as to the matters therein stated to be alleged upon information and belief and as to those matters he believes it to be true.

CHAS. H. SIMMONS.

Subscribed and sworn to before me, this 2nd day of October, 1913.

[SEAL.]

AUGUSTA WHITE,
Notary Public, N. Y. Co.

25 *Petition of Justrite Mfg. Co. to Intervene.*

United States District Court, Southern District of New York.

In Equity.

FREDERIC E. BALDWIN, Plaintiff,

vs.

ABERCROMBIE & FITCH Co., Defendant.

SIRS: Please take notice that a petition, a copy of which is hereto annexed will be brought on for hearing before this Court, at the Federal Court Rooms, in the Post Office Building, in the Borough of Manhattan, in the City of New York, on Friday, the 27th day

of June, 1913, at the opening of court on that day, or as soon thereafter as counsel can be heard, and a motion then made for the relief therein prayed.

Dated New York, June 26, 1913.

Yours, etc.,

WILLIAM M. CHADBOURNE,
Solicitor for the Justrite Manufacturing Company.

Office and P. O. Address, 32 Liberty Street, Borough of Manhattan, New York City.

To Philipp, Sawyer, Rice & Kennedy, Solicitors for the Complainant, 220 Broadway, New York City.

26

Petition to Intervene.

United States District Court, Southern District of New York.

In Equity.

FREDERIC E. BALDWIN, Plaintiff,
vs.
ABERCROMBIE & FITCH Co., Defendant.

The Petitioner, The Justrite Mfg. Co., a corporation organized and existing under the laws of the State of Illinois, and doing business in the city of Chicago, County of Cook, in the said State, respectfully shows that on the 20th day of May, 1913, the Bill of Complaint in the above entitled suit was filed in this Court, naming as the grounds for the bill, the selling by the defendant corporation of certain acetylene generating lamps, which your petitioner is informed, and so believes the facts to be, are lamps manufactured by it, The Justrite Mfg. Co., and in which event it would appear that the petitioner is within the description of parties having a right to intervene, as set forth in Federal Equity Rule No. 37, to the following effect,

"Any person may be made defendant who has or claims an interest adverse to the plaintiff."

27 Your petitioner, therefore, prays that the Court will issue an order making the said Justrite Mfg. Co. a party defendant to this suit, with leave to answer the said Bill of Complaint filed on the behalf of Frederic E. Baldwin, and to assume the burden of the litigation.

The Justrite Manufacturing Company.

By FREDERICK J. BECKER,
President.

Complainant's Testimony.

United States District Court, Southern District of New York.

In Equity. 10-219.

FREDERIC E. BALDWIN, AND JOHN SIMMONS COMPANY, Intervener,
Complainants,

vs.

ABERCROMBIE & FITCH COMPANY, and JUSTRITE MFG. COMPANY,
Intervener, Defendants.

NEW YORK; Monday, January 4th, 1915—10:30 A. M.

Before: Hon. Julius Mayer, D. J.

Appearances:

Messrs. Philip Rice, Sawyer & Kennedy, Solicitors of Record, by
James Q. Rice, Esq., for Complainants.

William M. Chadbourne, Esq., Solicitor of Record, by James R.
Offield, Esq., for Defendants.

Complainant's Testimony.

Mr. Rice: If the Court please, the bill in this case charged in-
fringement on two patents. We have notified the other side that
we will not rely on the first patent and will ask leave to dismiss as
to that patent.

29 I will offer in evidence a copy of the re-issued patent, No.
13,548 to Baldwin.

(Marked Complainant's Exhibit 1.)

I will offer in evidence a certain lamp, defendant's lamp.

(Marked Complainant's Exhibit 2.)

If the Court please, we have entered into a stipulation here which
I suppose is somewhere in the files in this case. I have a copy of
it, but I think the original is on file.

I offer in evidence this stipulation.

(Marked Complainant's Exhibit 3.)

I would also like to offer in evidence one of the complainant's
commercial lamps.

(Marked Complainant's Exhibit 4.)

I would also like to offer in evidence the decision of Judge Orr
on this patent, in the suit of Baldwin against Grier Company in
Pittsburgh.

(Marked Complainant's Exhibit 5.)

I would also like to offer in evidence a certain lamp as complain-
ant's exhibit 6, Grier-lamp, this being the lamp which was involved
in the Pittsburgh suit.

(Marked Complainant's Exhibit 6.)

FREDERIC E. BALDWIN, called as a witness in behalf of the complainant, after being duly sworn testified as follows:

Direct Examination by Mr. Rice:

Q. 1. You are the patentee of the patent here in suit, and one of the complainants in this case?

A. I am.

Q. 2. I hand you a lamp marked complainant's exhibit 4 and ask you whether or not you can identify this lamp. If so, please state what it is?

30 A. I do. It is a miners' acetylene cap lamp made by the John Simmons Company under license from me under the patent in suit.

Q. 3. What is your connection, if any, with the John Simmons Company?

A. I have no direct connection with the John Simmons Company, but I keep in touch with the manufacturing and selling and marketing of the lamps, and also in a consulting capacity.

Q. 4. The bill of complaint states that John Simmons Company is the only manufacturer and the only licensee under the patent in suit, is the statement true?

A. It is.

Q. 5. How long has the John Simmons Company been licensee under the patent in suit?

A. Sometime in 1908, we made an arrangement whereby John Simmons Company manufactured the lamps and both of us sold them. Later, about 1911, under a subsequent arrangement, they took over the entire making and selling of the lamps exclusively.

Q. 6. Will you state whether you derive any profit from the sale of these lamps to the John Simmons Company?

A. I do, they pay me a specified amount on each lamp they sell.

Mr. Offield: I suggest if the license is in writing it ought to be offered.

Mr. Rice: This is all I have to ask him on this point.

Q. 7. When did you first begin to market an "Acetylene Miners Cap Lamp"?

A. In January 1906.

Q. 8. How did that lamp which you say you marketed in 1906 compare with this lamp, exhibit No. 4?

A. It was practically the same lamp, merely some variety in style.

31 By the Court:

Q. 9. Did that lamp have the rod straight and not bent?

A. Yes sir, identically the same. The difference in the lamp was only the size.

By Mr. Rice:

Q. 10. I call your attention to a copy of the Engineering and Mining Journal of July 21st, 1906, and to an article on page 111 there-

of, and I will ask you whether or not you recognize the lamps which are shown in the cuts in this article?

A. I do.

Q. 11. Will you please state what the lamp Fig. 1 is?

A. Fig. 1 is the first acetylene cap lamp that I made. The other two are lamps of a little larger capacity.

Q. 12. How did the construction of the lamp shown in Fig. 1 compare with the construction of the lamps shown in the other two figures, the interior construction?

A. They are identically the same.

Q. 13. When did you first make this lamp shown in Fig. 1 of that article?

A. I made this lamp shown in Fig. 1, the latter part of December, 1905.

Q. 14. And how soon thereafter did you place any of these lamps on the market?

A. This first one, Fig. 1, was in January, 1906, and these (indicating) were a little earlier date. The other two were a little earlier date.

Q. 15. I understood you to say that the lamps shown in Fig. 2 and 3 were marketed earlier than the lamp shown in Fig. 1?

A. Yes sir.

Q. 16. Were those lamps shown in Fig. 2 and 3 cap lamps?

A. No sir, they were hand lamps, much larger capacity, they worked twelve hours.

32 By the Court:

Q. 17. Fig. 1 was the cap lamp?

A. Yes sir.

Mr. Rice: I will offer this publication in evidence.

Will you admit that this a regularly issued copy, Mr. Offield?

Mr. Offield: Yes.

It is admitted that the publication is a regularly issued copy of the Engineering and Mining Journal of July 21st, 1906.

(Marked Complainant's Exhibit 7.)

Q. 18. Will you state whether there were any miners' acetylene cap lamps on the market when you first started to market your cap lamp?

A. No, there was no other acetylene cap lamp on the market. I was the first to introduce it.

Q. 19. To what extent have those lamps been sold by yourself and John Simmons Company?

A. Probably over one million.

Q. 20. What lamps or lights were miners using at the time when you started to market these acetylene cap lamps of yours?

A. They used these oil lamps with a wick, candles, etc.

Q. 21. What advantages, if any, has the miners' acetylene cap lamp as compared with the oil lamps?

A. It has several great advantages. First, economy. An oil lamp

owing to the mine laws has to consume a high grade of oils and this cost the miners from twenty-eight to forty cents a gallon. A gallon lasts for a week. One of these acetylene mine lamps can be burned for a week at a cost not to exceed eight cents. Then the oil lamps give off a great deal of smoke which contributes largely to miners' asthma, and it also consumes a great deal of the oxygen in the air. Now, acetylene gas gives off no smoke and it only consumes one-eighth of the oxygen in the air that oil lamps consume so that a man has better health and he has much better air. In mines they do not get much fresh air, and the air is not changed around and quite a little oxygen has gone out of it. Then there is another thing for safety. These oil lamps have a great big wick, an inch in diameter and rough on the top and in going through windy places the sparks are often blown off into the timber that is oil soaked and also the miners throw away the partly consumed wick, they throw it away without putting their foot on it and that is another source of danger. There are no wicks and no sparks in acetylene lamps.

And there is one other reason. When they make their powder to blast with, they make it with their hands, and although the laws prohibit it, miners keep the lamps on their hats and a spark falling down will ignite the powder. It is quite a common case for a miner to be injured from the explosion of the powder. Again, there are no sparks in acetylene lamps.

Q. 22. Will you state whether any special kind of carbid is necessary for these lamps?

A. Yes sir, we have to have a special small size.

Q. 23. Will you state whether this special carbid was readily obtainable by the miners when you started to market these miners' cap lamps?

A. No, they could not obtain it at all.

Q. 24. How was it supplied by you?

A. We had to obtain agents, who would carry this carbid at the mines to supply miners as they needed it. There was none. We had to build up the whole trade.

Q. 25. Where did you get this carbid?

34 A. We had it specially packed for us by the Union Carbid Company.

Q. 26. Now, state whether or not you had any difficulty in getting these lamps adopted by the miners?

A. Yes sir, we had considerable difficulty.

Q. 27. Will you state what the difficulties were?

A. Well, in the first place, the miners had never seen acetylene and did not know what it was. When we showed them the lamp at first they thought it burned water and they would not believe that a little thing like that would work. I said there was no carbid; they did not know how to handle it, so we had to obtain agents in different mines and instruct our agents how to handle the lamp so that they could show the miners. Then we arranged with him to carry the carbid, and in that way we started it. But even then we had trouble. Of course, they have pretty strict mine laws, and some of

the State Inspectors did not know whether acetylene could be used in a mine, and they experimented with it and tested it, and the lamps began to take quite well, but in two states we had a great deal of trouble even after the men liked them. For two or three years it was very hard work to introduce these to the miners because the miners are illiterate and not progressive and many of them cannot even speak English and to introduce a proposition like this is very expensive and hard.

Adjournment taken until Tuesday, January 5, 1914, at 10:30.

35

Trial Resumed.

JANUARY 5th, 1914—10:30 A. M.

Mr. Melles: I understand that Mr. Offield covers both the defendants. Of course the interests of the defendant Abercrombie and Fitch Company is comparatively slight and to forestall the possibility within the heat of trial that it may be inadvertently overlooked, I should like to have it stipulated on the record that all objections and exceptions taken on behalf of any question shall be deemed to have been taken on behalf of Abercrombie and Fitch Company.

Mr. Rice: I agree.

The Court: Certainly.

FREDERICK E. BALDWIN resumes the stand:

Direct Examination by Mr. Rice (Continued).

Q. 28. Now widely has the complainant's lamp like exhibit 4 been sold?

A. They have been sold in about every mining community in the United States, where open flame lamps can be used.

Q. 29. What do you mean by open flame lamps?

A. An open flame lamp is where there is no gas in the mine, no explosive gas; safety lamps would have to be used under those conditions.

Mr. Rice: I offer in evidence this direction sheet.

(Marked Complainant's Exhibit No. 8.)

Q. 30. I call your attention to complainant's exhibit 8, and ask if you know what this is?

A. Yes sir, it is the direction sheet sent out with the lamp manufactured by J. Simmons Company.

36 Q. 31. Did you ever manufacture and sell the lamp illustrated in the drawings of the patent in suit?

A. Yes sir, we did.

Q. 32. Please state generally what the character of these lamps were?

A. It was a large cast iron lamp adapted to hold about three pounds of carbid and called a gang lamp because a gang of men could work by its light, it gave sufficient light for several men.

Q. 33. In other words, as I understand your last answer, you at

the beginning manufactured lamps in precise accordance with the patent drawings here?

A. Yes sir.

Q. 34. With the bent rod?

A. Those lamps were quite large, and were about that large in diameter (indicating about seven inches) and then they worked perfectly well with a straight stirrer, but you had such a long distance to carry the water to the good carbid on the outside. As you see here, the ball forms at the middle, and with these big lamps it took a long time for the flame to come up and by using the bent stirrer you could reach further away and you could get the results quicker.

You see, in that lamp (the lamp illustrated in the patent) the water travels about that far (indicating); in the small lamp it travels about an inch from the center to the outside. In the big lamp it travels about three inches and it took too long to get through.

Q. 35. You were the complainant, were you not, in the suit of Baldwin against Ble-ser, in the Circuit Court for the Southern District of Illinois?

A. I was.

Q. 36. When was the bill filed in that case?

A. In January, 1909.

37 Q. 37. And how soon after you learned of the infringement in that case was that bill filed?

A. I cannot recall the exact date but as quickly as the attorneys could prepare the bill after we received the information of the infringement.

Q. 38. You were one of the complainants in the suit of Baldwin and J. Simmons Company against Grier in the Western District of Pennsylvania, were you not?

A. Yes sir.

Q. 39. When was the bill in that suit filed?

A. In October, 1913.

Q. 40. How long, if you know, has this instruction sheet, exhibit 8, been sent out with your lamps?

A. I cannot give the exact date, when that one was sent out, but about 1911 or 1910.

Cross-examination by Mr. Offield:

X Q. 41. Mr. Baldwin, when did you first make acetylene lamps of any character, irrespective of whether they were to be used for miners, bicycles or any other use?

A. Oh, somewhere around 1899, about that, somewhere in that neighborhood; I do not know the exact date.

X Q. 42. And the first patent that you took out upon acetylene lamps of any character was the abandoned patent in this case, No. 656,874?

A. I think so.

X Q. 43. Now, in this abandoned patent you show a water compartment, carbid compartment, a tube leading from the water com-

partment into the carbid compartment, and a rod extending through the tube, which extends beyond the water tube and has a pointed end—did you as early as 1899, make a lamp of the construction shown upon the second sheet of drawings designated as Fig. 6?

Mr. Rice: I object to that, if your Honor please, as irrelevant and immaterial and not proper cross-examination. We have not gone into this patent or the construction shown in this patent.

The Court: Objection overruled.

The Witness: I made it somewhere in that neighborhood, I cannot recall whether it was made before the application of the patent or afterwards but it was in that neighborhood.

X Q. 44. That is, in the neighborhood of 1900?

A. Yes sir, somewhere about that, it might be 1901 or later.

X Q. 45. You cannot state specifically?

A. I cannot remember.

X Q. 46. But it was somewhere after 1899 and somewhere in the early part of 1900?

A. Yes sir.

X Q. 47. Now, in that lamp as shown in figure 6, the only difference between the lamp figure 6 and the lamp figure 10, is that the intermediate compartment between the water chamber and the carbid chamber has been reduced in size so that there is only a small space between the water compartment and the carbid compartment, the other parts of the lamp are substantially the same?

A. Yes sir, the main features.

X Q. 48. In other words, the water tube C of the lamp construction shown in figure 1 is of the same length as the water tube in the lamp construction shown in figure 6?

A. I should say approximately. Of course, they were different lamps.

X Q. 49. Well, approximately, that is they were within one-quarter of an inch of each other?

A. Yes sir, I suppose so.

39 X Q. 50. Now, what was the function of the rod E in this abandoned patent?

A. (Witness examines specifications).

X Q. 50. Don't you know without examining the specification of the patent to find out?

A. I have forgotten exactly what I said about it, I want it to agree. But the rod I kept the valve from turning, that was one of its features and it kept the end of the water tube clean if the carbid got up inside of it.

X Q. 52. But the rod in this abandoned patent did not perform any function in your estimation of operating to restrict the water duct or water tube?

A. No, I would not say that it had that function.

X Q. 53. Nothing in the specification that would indicate that in any way?

A. No.

X Q. 54. In the abandoned patent, you show a perforated tube in the carbid chamber into which the water tube extends?

A. Yes sir.

X Q. 55. That tube is removable is it not?

A. Yes sir.

X Q. 56. That is, you can take it out and throw it away, or put it in, as you want to?

A. The lamp would not operate if you threw it away.

X Q. 57. You mean to state that that lamp would not operate, generate acetylene gas in the proper manner if the perforated tube was omitted from it?

A. Yes.

X Q. 58. Now, in figure 6, if you omit the perforated tube from that construction where the water tube extends down toward the bottom of the carbid container, would a lamp of that construction operate if the perforated tube were omitted?

A. We never found it to do so, we considered it always necessary.

40 X Q. 59. You never were advised by the miners that there was no use in supplying these lamps with perforated tubes because the tubes were of no effect and the miners simply threw them away?

Mr. Rice: I object to that, if your Honor please. There is no statement here that they were introduced in mines. As a matter of fact—

The Court: Reframe the question.

X Q. 60. Please state whether or not in a lamp as shown in figure 6, if it was ever called to your attention that the perforated tube was of no consequence in that construction and that it was common practice for users of this lamp to throw the perforated tube away?

A. I know it was not, because we had to sell them all the time to replace them for these bicycle lamps.

X Q. 61. You do not know of any instance where they did throw the tube away, and told you so?

A. No one ever told me so, absolutely, because we know they would not work.

X Q. 62. Now, please state whether or not the water tube which you used in this abandoned patent, or lamp made in accordance with the abandoned patent, was substantially the same sized water tube as used in the lamp today?

A. This water tube was not the same size as the one we use today.

X Q. 63. Well, how much larger or how much smaller than the one you use today?

A. It was more than double the diameter, I should say, and with a large hole in it.

41 By the Court:

X Q. 64. That is the first patent?

A. The lamp shown in the abandoned patent had a water tube,

I should say, certainly double the diameter and a much larger hole in the interior.

By Mr. Offield:

X Q. 65. Was this drawing made from an actual lamp that was presented to the draughtsman or was it an imaginary affair based upon no definite relationship of parts?

A. I should say that it was drawn from the original lamp, but without particular attention to the actual details.

X Q. 66. And isn't it a fact that the water tube as shown in this abandoned patent as compared upon the face of the patent, is substantially the same size as the water tube used today in your lamp?

A. Oh, no, nothing like it.

X Q. 67. Please measure the diameter of the water tube of your abandoned patent and compare it with the diameter of the water tube of your present structure.

Mr. Rice: I object to that if your Honor please, as being irrelevant. He is asking this witness to measure here this picture which does not represent the actual size of any lamp, measure the water tube of this picture, and compare it with the water tube of that lamp. Of course, this particular picture itself is a reproduction from the actual drawings filed in the patent office. In other words, lithographic copy, I think, is $3/5$ ths the size of the actual application filed.

(Discussion between Court and Counsel).

Mr. Offield: I withdraw the question.

42 X Q. 68. Have you anywhere in your possession a lamp that was made by you in 1900 along the lines of construction as the lamp shown in figure 6 of the abandoned patent?

A. I might have one, I am not sure.

Mr. Rice: If your Honor please, in order to stop this line of examination we are bound here to make a search and produce, if we can possibly produce it, that lamp. If we can possibly produce that lamp, we will produce it. We will be very glad to do it if it is a possible thing to get one of those lamps.

By the Court:

X Q. 69. As I understand it, this lamp that you actually had of that type was about double the diameter, so far as the tube was concerned, of the present lamp?

A. The tube was much larger than this (indicating the hook on complainant's exhibit 6) it was more than twice the size because this lamp was a big bicycle lamp.

X Q. 70. The lamp of the abandoned patent?

A. Yes sir, and it would be fully twice the size. If you measure this tube and it came to the same size, which it does not, it would still be double the size.

X Q. 71. And in those lamps made in 1900, the rod that extended through the water tube had a straight end, and did not have an end with a stirrer on it as in the re-issued patent?

A. No, not a great big bent end.

X Q. 72. Did the rod of the abandoned patent have a straight end?

A. Well, there is a slight curve to it, as you can see in the patent.

43 X Q. 73. What about the actual construction?

A. It was made virtually like the drawing.

X Q. 74. Now, what was the difference in the end between the construction you made under the first patent and the lamp you have been making under this present patent—what is the difference between the rod ends of the abandoned patent, and the lamp that you are actually making now?

A. The whole principle of the lamp is different. The wire goes in both lamps through the water tube and in the patent in suit the wire should go further through than is shown in this patent.

X Q. 75. In the abandoned patent?

A. The abandoned patent. They may be straight or bent in either. In this abandoned patent, not being immersed in the carbide the carbide got up into this large tube and this wire was intended to clear the carbide out of the inside of the tube.

By Mr. Offield:

X Q. 76. And not from the mouth of the tube?

A. Well, around, it did not collect so much there.

X Q. 77. Did you ever manufacture an acetylene lamp of any kind with the end of the rod that extended through the water tube projecting at substantially right angles to the body of the rod?

A. Yes sir, that large gang lamp that I spoke of.

X Q. 78. Did you ever manufacture a small lamp with the end of the rod bent, such as for a bicycle?

A. Never.

X Q. 79. Did you ever manufacture a miner's lamp with the rod bent such as is shown in the re-issued patent?

A. Never, no.

Mr. Rice: I object to that. Do you mean a miner's cap lamp, a miner's lamp may be a gang lamp and if you take one of those—

44 By the Court:

X Q. 80. As I understand the only miner's lamp that you made with a bent rod, which it might be called, was this large gang lamp?

A. Yes sir.

X Q. 81. All other lamps used by miners you have made with the straight rod?

A. All the small ones, yes sir.

By Mr. Offield:

X Q. 82. Now, you started to manufacture miners' lamps at about the same time that your application for the original patent was applied for, that is the patent No. 821,580.

Mr. Rice: I object to the question. What do you mean by miners'

lamp? Miners' cap lamp or miners' gang lamp, because it makes a material difference?

Mr. Offield: Well, either. I do not see as it makes any difference.

A. I manufactured the large gang lamps about that time.

X Q. 83. And you began to manufacture a miners' lamp to be carried upon a miners' cap or other parts of the person of the miner in about 1905, as I understand you?

A. The latter part of 1905.

X Q. 84. But these lamps that you first manufactured, did they have a valve upon the rod that extends through the water tube, or were they of the valveless type that has been offered here in evidence?

A. These cap lamps were of the valveless type.

X Q. 85. Isn't it a fact that you have sold to a great corporation known as the Union Carbide Company a good many hundred
45 or possibly thousands miners' lamps to be carried upon the caps of the miners?

Mr. Rice: I object to the question.

The Court: Strike out "a great corporation."

The Witness: No, I never sold them any.

X Q. 86. You never sold any miners' lamps to the Union Carbide Company?

A. I sold a sample, gross or so, that is all.

X Q. 87. What were those lamps to be used for by the Union Carbide Company?

A. Miners' caps.

X Q. 88. To be resold by them, or to be given away?

A. I do not know, sir.

X Q. 89. Don't you know that the Union Carbide Company has quite extensively conducted a campaign for educating the miners to use acetylene lamps and thereby increase the sale of carbide?

Mr. Rice: I object to the question as purely irrelevant.

(Discussion between Court and Counsel.)

The Court: Objection overruled.

The Witness: I have always felt that the Union Carbide Company did not do any introduction or take any interest in the acetylene business until after three or four years after we had had all the hard work, and that they then tried to reap the benefits.

X Q. 90. By "reap the benefits" you mean by selling their carbide?

A. No, by buying lamps and trying to make some money.

X Q. 91. The Union Carbide Company never manufactured an acetylene lamp for mining purposes?

A. No sir.

46 X Q. 92. Is it not a fact that the Standard Oil Company has endeavored to discourage the use of acetylene more or less in mines?

Mr. Rice: I object to the question.

Mr. Offield: I withdraw the question.

X Q. 93. Please state whether or not the miners' lamps of types other than the acetylene lamp are in very common and general use throughout certain parts of the United States today?

A. Well, I have not been selling lamps now for several years, but I understand that acetylene is rapidly displacing oil, to how large an extent I am not capable of saying.

X Q. 94. You know that there are a number of states that have laws which prevent the use of acetylene lights in mines?

A. No sir.

X Q. 95. You have no knowledge of that?

A. I know that they changed the law in Iowa——

X Q. 96. I am not referring to that state—you do not know that to be a fact?

A. I do not know of a state in the Union where acetylene lamps are not used in the mines.

X Q. 97. And you do not know it to be a fact that fully one-half of the lamps in use today in the mines are of the oil burning type?

A. I doubt it.

By the Court:

X Q. 98. Referring now to the re-issued patent, and its parent did you ever manufacture, or cause to be manufactured cap lamps with a bent rod, or were they always manufactured with the straight rod?

A. Yes, they were always.

47 X Q. 99. Then the only bent rod construction was this big gang lamp?

A. Yes sir, on account of the large diameter.

Redirect examination by Mr. Rice:

Re-D. Q. 100. Referring to this lamp shown in patent No. 656874, the flow of water through the tube was controlled by this valve B, was it not?

A. Yes sir, entirely.

ALFRED W. PROCTOR, called as a witness in behalf of the complainant, after being duly sworn, testifies as follows:

Direct examination by Mr. Rice:

Q. 1. Will you please state your occupation, Mr. Proctor?

A. I am a consulting engineer and mechanical expert.

Q. 2. What mechanical training and experience have you which enables you to testify as a mechanical expert?

A. My early education was received in the trade schools of Boston, and after that I took a three years' regular course of study in mechanical and constructing engineering at the Massachusetts Institute of Technology, where I was trained in the theories and principles of

mechanical sciences and received much instruction in machine shop work and laboratory work and precise measurements.

I have since been employed by many manufacturing companies, superintending the construction and operation of machinery of various sorts.

During the past fifteen years, I have been in consulting engineer practice, and have also been a machine shop foreman and
48 have worked at the bench, and I have owned and operated a manufacturing shop.

I was for seven years a member of the examining corps in the United States Patent Office, where I was constantly engaged in comparing the structures of patent applications with structures of prior arts.

I have been employed in numerous cases as consulting engineer to make tests, experiments, calculations and reports on machinery, and this has been true in a number of cases in tests and reports on hydraulic machinery and hydraulic apparatus, and tests and reports relating to the flow of water.

I have used and experimented with, tested and reported upon acetylene lamps and particularly portable lamps such as is before the Court in this suit, and I testified in the litigation against Grier Company in Pittsburgh.

I have also been experimenting with these lamps for a number of years as a rider of bicycles and motorcycles.

I have testified in many patent suits as a mechanical expert.

Q. 3. Have you read the re-issued patent of Baldwin No. 13,542 here in suit, and if so, do you understand the construction and operation of the lamp therein set forth, particularly referring to Claim 4 of the Patent?

A. I have and do.

Q. 4. Will you please state what the mechanical attributes are of the lamp construction, particularly specified in Claim 4 of this patent?

A. The lamp specified in Claim 4 of this patent will comprise four principal elements or features. The water reservoir, the carbide container, the water feed and the burner.

49 Claim 4 refers to a lamp and contains these principal elements, but particularly relates to the water feed. I would like to say a few words about the main features before referring to the water feed, which is particularly referred to in this claim. The water reservoir in a lamp of this sort, that is a small miner's cap lamp, contains a very limited amount of water, scarcely more than an ounce or two. And this water is required to flow out of the reservoir during the space distributed over about two hours or more of time so that the quantity flowing in any small period of time, as a minute or a second, is exceedingly limited. Of course, it is necessary for the flow to be substantially uniform, and distributed in a uniform manner over the entire period of the operation. Theoretically, this might be accomplished by a simple hole or perforation or an opening, and that would work if the water were chemically and physically pure. In that case, the water would continue to flow

in sufficiently small quantity, but practically all water contains a large amount of organic matter, and also mineral particles of dust, and with such a small quantity as is involved here, a small crevice or opening would be either totally or partially clogged up very soon and that would either change the flow, or cut it off. Accordingly, the plan of a simple crevice or hole of that sort is not practicable.

Another plan is referred to in the patent specification. Now, the water feed referred to in this Claim is a plan of getting the slow even feed required without any of the difficulties as mentioned.

Coming now to the second feature, or element, of the lamp, the carbide container, this is also a small vessel, and contains a
50 limited quantity of calcium carbide which is a crystalline rock, and comes in small lumps, so that the container will be half full of these lumps, when the lamp is started. When hydrated, the carbide changes its form and becomes powdery, and it may be light or feathery, like ashes, or rather dense and tightly packed like damp sand, depending on the conditions under which it is hydrated.

It also swells when it is hydrated and nearly fills the container. The carbide container of course also affords the only gas chamber or gas storage space that there is in this lamp, and that is very limited. For that reason, the generation of gas must be also very uniform in a lamp of this class because it must be produced substantially as it is consumed. There is no storage space to take care of any accumulation, therefore, the water feed must be even and regular for this cause.

The fourth feature I spoke of, the burner, requires no special mention except that it uses a very small flow of gas, about one-eighth of a cubic foot per hour.

Now, referring particularly to the lamp referred to in Claim 4, and the water feed of such lamp, I might refer to this drawing entitled Complainant's Commercial Lamp.

Mr. Rice: I offer in evidence the drawing, Complainant's Commercial Lamp, as Complainant's Exhibit 9.
(Marked Complainant's Exhibit 9.)

The Witness: This illustrates the water reservoir, the carbide container and the burner, all marked with the appropriate inscriptions.

The water feed itself is referred — in this Claim as "a water
51 tube extending from the former."—that is, from the water reservoir,—“a considerable distance into the latter,”—that is, the receptacle for calcium carbide,”—and adapted to be imbedded in the mass of carbide in the receptacle.

There is also specified, “a rod extending through the water tube “and constituting a stirrer to break up the slacked carbide around the “outlet of the water tube.”

The water tube is shown in black section, on this illustrative drawing and is marked “water tube.” The water controlling rod is shown extending down through the water tube and is marked “restricting rod.” The water tube, it will be observed, is carried into the body of the carbide in the receptacle. In other words, carried a considerable distance into the receptacle for calcium carbide,

and the stirrer is a prolongation of the water controlling rod at the bottom and is labelled "stirrer."

As to this water feed, there are two principal features and they are referred to in combination in this claim.

I have here another drawing entitled, "Proctor Flow Diagram," and which illustrates to actual size, or rather to an exact scale, the sections of the tube and rod in the complainant's actual lamp, this being cross section, 20 times enlarged, Fig. 1. You will see that the tube has a duct or bore of comparatively large size, and there is a rod or wire within the tube also of comparatively large size
 52 which affords a space between the two, or crevice of considerable area. That is to say, there is a considerable surface on the inside of the tube and a considerable surface on the outside of the rod which are in contact with the descending stream of water. The tube is also a comparatively long tube for it extends from the reservoir clear down to the carbide container. Due to these various features, there is a large amount of retarding surface afforded to obstruct the flow of water which descends in an even sheet in contact with the wall. In this way, the flow is cut down to the small amount required although the actual crevice is not so thin as to be readily obstructed by the particles of mineral and organic matter in the water. In other words, the actual crevice is big enough in area not to be obstructed by particles in the water but the amount of surface, retarding surface, is so great as to cut down the flow to the amount required, the very small flow that I have mentioned.

Mr. Rice: I offer in evidence the drawing referred to by the witness.

(Marked Complainant's Exhibit 10, Proctor Flow Diagram.)

The Witness: Fig. 2, is a simple bore or hole of the same area as Fig. 1. In other words, I have calculated the area of that white section, and laid it out in Fig. 2, and it has this size showing the large amount of actual area. Now, by experimenting, I found that a hole of that very much smaller size (these are all twenty times
 53 enlarged, there is the actual article, if you will look through (indicating), will flow considerably more water than this Baldwin water feed, which has considerable larger area. That shows that the flow is cut down in the manner I have said by the surface friction for the retardation. Of course, this small hole, Fig. 3 would be quickly clogged up by the sediment in the water, and that is the practical result.

By the Court:

Q. 5. I want you to give me that point again?

A. Fig. 2 was drawn by me to show simply an opening having the same cross sectional area as the cross sectional area of the actual Baldwin feed. All twenty times enlarged.

Now, Fig. 3 is another view made by experiments from an actual orifice which will flow considerably more water than the actual Baldwin feed. It will be seen that this is a very small hole, and yet it will flow more water than the other.

I here produce the actual orifice from which Fig. 3 is drawn.

Mr. Rice: I offer in evidence the plug containing the orifice which the witness has stated will flow somewhat more water than the actual Baldwin lamp.

(Marked Complainant's Exhibit 11, illustrative plug.)

The Witness: Summing up briefly on this point that I have just made, the water feed referred to in this claim affords the extremely small flow desired without liability of stoppage and without
54 using a regulating valve. A second point on this same subject is that there is a comparatively large opening for the water flow, that is, an opening of considerable cross sectional area as distinguished from this annular shaped, but this annular shape is advantageous in that no particle can very well become lodged so as to obstruct the whole ring, and it would not seriously cut down the flow owing to the ring shape, so that there are two points, one, this large area, and this ring shape.

I will now refer more particularly to that part of the Claim which states that the tube and rod are carried down into the carbid container. The result of this feature is that the tube is always imbedded in the carbid. This is plainly shown from the drawings, Complainant's Commercial Lamp Exhibit No. 9. Bearing in mind what I have stated about the carbid hydrating, it will be evident that the result of the flow of water is to hydrate the carbid around the outlet in such manner as is indicated on this drawing. In other words, there would be a sort of a ball quickly created around the outlet of the water tube. This would cut down, or in fact, stop the flow, due to its pasty nature, and due to the expansion, except that the stirrer is provided. By turning the stirrer the sludge ball is opened up enough to allow the water to continue to percolate through and after that has once been done, the water will continue to percolate through with surprising regularity for a long time thereafter.

The sludge ball which is quickly formed, and which remains
55 continuously throughout the operation of the lamp is therefore a factor of its operation which must be constantly taken into consideration and which as a matter of fact has an important effect on the operation of the lamp.

By the Court:

Q. 6. What is the physical operation of the rod on that ball?

A. As a matter of fact, the turning of the rod has the effect of opening up a crevice around the rod for about one hundredth or one-half of one hundredth of an inch in width, and as this ball is like mortar and attains a fixed condition of hydrating that crevice will remain, and remains throughout the life of the charge of carbid in the lamp and allows the water to percolate through.

Now, that brings out very well the next point, that by means of the stirrer the sludge ball is kept in proper condition. In other words, the crevice is opened up; and of course also the water tube can be cleaned by that same rod. Furthermore, the imbedding, of

course, allows a comparatively long tube and rod, both of which increase the retarding friction.

I next come to a very important point of the operation and which brings in the fact of this sludge ball. The gas pressure in the carbid container will actually vary somewhat. Carbid lumps vary in sensitivity and as the space there is so very small it will be inconceivable that the generation of gas could be absolutely uniform. Therefore, there are minor variations of pressure of the gas in the carbid container. Now, the effect of the sludge ball which is formed
56 around the outlet is that it makes the lamp comparatively insensitive to variations in the gas pressure.

In other words, the sludge ball has the effect of so surrounding the water outlet that the water continues to percolate down and through that ball at a substantially uniform rate, regardless of these minor variations of the gas pressure and that is, of course, the result desired. It is desirable, in other words, that the feed should remain continuous notwithstanding the fact that the gas pressure may have fluctuations; furthermore it makes the lamp relatively insensitive to the drop of the water in the reservoir. Of course, when the reservoir is full, the head of water is rather greater than when the reservoir is nearly empty and the wick effect, that is the percolating effect of this ball of sludge which remains continuously in existence after the lamp is started seems to make the flow substantially even and constant regardless of the falling head, so that the lamp burns as brightly at the finish as it does at the start.

By Mr. Rice:

Q. 7. I think you might bring out just what you mean by the head effect of the gas pressure?

A. The water reservoir is several inches higher than the outlet of the tube in the carbid container and of course following the usual hydraulic principles, the higher your reservoir the deeper the water in the reservoir above the final outlet of the discharge pipe, the more head or pressure there is to the water. The usual hydraulic expression is to say "head of water," meaning available pressure at the outlet, and the point I was making is that as the water falls in
57 the reservoir that available pressure or head becomes less, due to the fall of the level.

Q. 8. What effect does it have on the gas pressure in the lamp, if not counteracted?

A. If this were not counteracted in the manner I spoke of by the effect of the ball of sludge, the gas pressure would fall because otherwise the gas pressure of say two and one-half or three inches would be greater than the water pressure and the water would not come down through. Therefore, summing up this part, the lamp is comparatively insensitive to variations in the effective water head which is due to the imbedding. Also, the lamp is insensitive to gas pressure variations. The sludge ball acts like a wick and feeds the water regularly regardless of variation of pressure of gas in the container.

Q. 9. I think you might elaborate that point also.

A. I mentioned the fact that the gas pressure necessarily will fluctuate.

tuate more or less in this container due to the varying activity of the carbide and it will perhaps be between two and three inches, and the water may go up to four or five inches. There are such cases. Now, if we had a simple tube not imbedded in the carbide, the effect of the gas pressure jumping up would be to shut off the water because the gas pressure in the container would be greater than the head of water in the water column, therefore the flow would cease or, it is conceivable that it might even be blown back, I mean the water in the tube, by the excess of gas pressure in the carbide container. Either of those results would be bad.

By having this water tube carried down into the carbide container, the ball of sludge collects around the outlet and acts like a 58 absorbent wick so that even if the gas pressure does vary, or goes up to five inches, the water will not be blown up through the water tube and the flow will not even be cut off but will come down in the same regular manner as before.

I have made numerous experiments with these lamps. I have taken a manometer tube which is a simple glass tube arranged so as to indicate inches of water pressure, and attached it to the carbide container so as to determine the pressure, and I worked the lamp under those conditions throughout its whole life of operation, that is about two hours. I have also attached the manometer to the burner in order to determine what pressures might be obtained in the lamp without interrupting the water feed.

Now, also the effect of imbedding the tube in the carbide and of containing the sludge ball that I have spoken of, is that the acetylene gas is prevented from escaping into the atmosphere and fouling it. If the pressure runs up in this lamp it might result under other conditions in the gas running up to the water tube and into the reservoir and out into the open and a very small quantity of acetylene is unpleasant and also unhealthy, so that by carrying down the water tube into the carbide and having it imbedded in this way, a very efficient check or seal is provided to prevent any escape of the acetylene into the atmosphere and it works very efficiently in this way. I have tested it up to 10 or 12 inches and without escape of the gas under certain conditions, a very remarkable result.

Also this brings in another desirable point as to this water feed is that it enables a high pressure of gas to be obtained in a 59 small lamp. The tested available height is quite small and therefore the water head is rather limited, but imbedding enables comparatively high pressure of gas to be obtained in a small lamp. This is partly due to the wick-like action of the sludge ball and partly its effect in holding back the gas pressure from blowing upwards through the water tube.

Also, this feed is particularly adapted for lamps with a small container where there is liable to be very great variations in the gas pressure.

Now, I now come to another important point, or attribute, of the construction referred to in this claim which is that by embedding the tube in the carbide, carrying it right down into the mass, the carbide is made to act as a screen or filter and keeps the outlet of the water

tube entirely away from the dust-laden gas in the container. The acetylene gas as generated contains a considerable quantity of dust and if the outlet of the water tube were exposed to this gas, as by being in the upper part of the container those particles of lime would deposit upon the outlet.

Baldwin Patent No. 656,874 illustrates such a construction as I have just referred to where the outlet of the water tube is not imbedded in the carbid and in that case a foraminous tube or screen has been provided to keep the outlet away, so much as possible from this dust laden gas which always has a tendency to deposit upon the outlet, or cut off the flow. This method, providing a foraminous screen, was one attempt to cure this difficulty, but the lamp referred to in this Claim has a plan differentiated by carrying the water feed right down into the body of the carbid so that the carbid and the sludge ball that I have spoken of form a most efficient screen to keep all
60 dust entirely away from the outlet.

Also, in the Baldwin lamp, the shaking of the water out of the tube causing uneven generation of gas is prevented by the imbedded tube and rod and the ball of sludge. Of course, these lamps are carried on the cap of the miner, and the miner is moving his head around and that might have the effect of shaking the water out of the tube and causing a sudden generation of acetylene in an excessive pressure. By carrying the water feed right down into the carbid mass, the sludge acts as a check and prevents the water being shaken out of the tube so that the flow is not changed from that cause. Also of course, as a mechanical attribute, the entire water feed is cheap to construct and durable and easy to repair.

By Mr. Rice:

Q. 10. Will you please compare the lamp, Exhibit No. 2, Defendant's lamp, with the construction pointed out in Claim 4 of the patent in suit and state whether or not this lamp contains the elements specified in that claim operating as they are stated?

A. I find that defendant's lamp contains a water reservoir, a receptacle for calcium carbid, that is this part at the bottom, and a water tube extending from the reservoir a considerable distance into the latter. I find a water tube extending from the former, meaning the water reservoir, considerable distance into the latter, that is into the carbid container, and adapted to be imbedded in the mass of carbid in the receptacle.

I further find a rod extending through the water tube,—that is, this wire which you can pull out by the handle at the top and
61 constituting a stirrer to break up the slacked carbid around the outlet of the water tube, the rod operating to restrict and thus control the flow of water to the carbid as set forth. I find that this tube and rod are such as referred to in this claim, having as a matter of fact the same dimensions as the tube and rod in the complainant's lamp, by actual measurement.

I find therefore that defendant's lamp is the lamp referred to in Claim 4 of this patent, having the same features of construction com-

bined and operating in the same way throughout to produce the same results.

Q. 11. In making your comparison, did you note that in this specific construction of lamp illustrated in the patent in suit, the stirrer is formed by bending the end of the rod at an angle through the portion which extends through the tube?

A. Yes, sir.

Q. 12. Will you state whether or not in such lamps as defendant's and complainant's lamps any function is subserved by a stirrer formed by bending the end of the rod as distinguished from the stirrer formed by leaving the end of the rod straight?

A. No, the same function is subserved in both cases.

Q. 13. On what do you base that statement?

A. The patent states the function of the stirrer as a device which on proper manipulation may be used to break up the mass of carbid surrounding the outlet of the water duct and which by having become slacked and caked by the action of the water, prevents the proper percolation of the latter to the unslacked carbid in the receptacle.

62 I have experimented with a straight stirrer and I found that this result is obtained thereby, and I have also experimented with the bent stirrer and obtained the same result.

Q. 14. Have you operated the defendant's lamp?

A. Yes, sir.

Q. 15. Will you please state about how much the volume of carbid increases by hydration?

A. About two-fold.

Q. 16. Did you compare the relative dimensions of the complainant's and defendant's lamps so far as the water tube and restricting rode are concerned?

A. I have, and found them identical.

Q. 17. That is to say, the tube is the same bore and the rod is the same size?

A. Yes, sir.

Q. 18. Referring to Fig. 2 of the patent in suit, a valve M is shown—will you please state what the function of this valve is?

A. This is a mere shut-off valve, not a regulating valve. Its function is purely to shut off the flow of water completely and entirely terminate the operation of the lamp.

Q. 19. The lamp, Complainant's Exhibit 2, has a valve also, I believe—will you please state what the function of this valve is?

A. That is also a shut-off valve and its only function is to entirely shut off the flow of water when desired and fully terminate the operation of the lamp.

Q. 20. On what do you base this last statement as to the function of the valve?

A. It is easy to see that that is the case by a mere inspection of its construction. I have also tested the lamp and I find that it cannot be used to regulate the flow but serves only to cut off the flow of water.

Cross-examination by Mr. Offield:

63 X Q. 21. According to my understanding of your testimony, the invention in the Baldwin re-issued patent was in providing a device with a rod that entered the water tube and restricted the orifice to retard and thus control the flow of the water?

Mr. Rice: I objection to the question.

The Court: That is objectionable under our rule here.

X Q. 22. It was old in the art in acetylene lamps of all types whether they be worn on the miner's hat or carried on the freight car or used for house purposes, of having a water tube that extended into the carbid?

Mr. Rice: I object to the question if your Honor please. I have no great objection to his going into the prior art with this expert if your Honor wants him to do it.

The Court: Objection overruled.

The Witness: I am not familiar with any lamp of the class you mention that answers that description as I understand it.

X Q. 23. That is, your testimony here is based on the supposition that it was new in the art so far as you know it to extend the water tube into the carbid—that was a new feature when you considered this re-issued patent?

Mr. Rice: I object to the question as irrelevant and immaterial for this reason, that it does not make any difference whether that particular feature was new or old, it is not material in view of the fact that it is not claimed in this matter.

The Court: Objection overruled.

64 The Witness: Well, as a mere fact of abstract definition. I think there were lamps and house generators that had that isolated definition of some kind of a tube extending into carbid under some special conditions.

X Q. 24. And that in this indefinite and hazy recollection which you have of the prior art where the water tube extended into the carbid, the end of the water tube was not surrounded by any perforated or foraminous structure?

A. Well, the prior art contains an enormous number of patents and while the vast majority employed a foraminous screen, there are a number of special lamps having special peculiarities of operation, and I would like to have those identified by a picture, if I am going to talk about them.

X Q. 25. Please state whether or not in the prior art, as you knew it, there is an acetylene generating apparatus, whether it be small as a miner lamp, or as big as the Woolworth Building, where the water tube extends into the carbid?

Mr. Rice: I object to the question as incompetent, immaterial and irrelevant.

The Court: Objection overruled.

The Witness: I think there may be lamps or house generators of the prior art that might answer that definition.

X Q. 26. Well, you know there is that kind of a structure in the art?

A. I have not examined the patents of the art carefully recently because there are a vast number of them. So I do not like to declare exactly what there is or is not.

X Q. 27. Isn't it true that if there is some patent in the prior art showing the water tube extending clear into the carbid that a sludge will naturally be formed around the outlet of that water tube?

A. It depends entirely on the construction and arrangement and everything else.

X Q. 28. If you have a tube extending into the carbid and you put water through that tube that comes in contact with the carbid you get a sludge around there, do you not?

A. Well, you can imagine the water coming in through a faucet or hose and in that event the mere force of pressure would drive away through the carbid—you would have no such formation—

X Q. 29. Just imagine it coming in under an ordinary proper flow.

Mr. Rice: I object to the question.

The Court: Sustained.

X Q. 30. If you have an apparatus with the water tube extending into the carbid and the end of that tube is imbedded in the carbid and you allow water to flow by gravity from a tank above the tube into the carbid, a sludge will be created around the end of that tube, will it not?

Mr. Rice: Objected to.

Mr. Offield: I withdraw the question.

X Q. 31. Is there anything said in the Baldwin re-issued patent about the effect of the head of water having any influence upon the regulation or control of the lamp?

Mr. Rice: Objected to as irrelevant.

The Court: Objection sustained. The patent speaks for itself.
(Discussion between Court and counsel.)

66 By the Court:

X Q. 32. There is one thing that I should like to have somewhat clear—you said that the bend performed no function in a so-called miner's cap lamp, as I understand you—is that right?

A. Yes, sir.

X Q. 33. Well, now, what does it do in a big lamp like Mr. Baldwin spoke about—what is the function—why is there a bend?

A. Well, I think I can imagine that in this way. When you take a small lamp of the size of the complainant's miner's cap lamp the sludge ball, the ball of hydrated carbid around the outlet will be only about as big as a pea. Now, it is fully broken up by the re-

tation of a straight wire, a crevice one-half of one hundredth of an inch is opened up all around, and it is sufficiently broken up for all purposes. If you have a bent end to the rod, it sweeps around through the sludge, and, of course, also breaks it up, but it may not be more thoroughly effective and probably would not be because the dust or sludge settles back under those conditions to where it was before and there is not any crevice opened up around the wire in exactly the same way.

Now, when you have a rather large lamp, like a gang lamp, everything is on a somewhat larger scale, naturally, and the sludge or hydrated carbid which collects around the outlet will be larger than a pea. It will reach out further and it is necessary in that case to sweep around through it in order to break up its outside.

X Q. 35. Then as I understand your answer, the bend at the end, putting it colloquially, does more stirring than if it was not bent, in a large lamp?

A. Yes, sir, in a large lamp.

67 Br. Mr. Offield:

X Q. 36. In that portion of the specification of the re-issued patent between lines 54 and 64 which you referred to on page 2, is there anything said in there about a crevice in the sludge mass?

A. Well, the words simply are, "used to break up the mass of carbid surrounding the outlet to the water duct."

X Q. 37. Now, speaking from a practical or a mechanical standpoint, when you have in mind the breaking up of a mass of material, do you consider that forming a little crack in that mass is breaking the mass up within the ordinary understanding of the term?

A. I think so, especially as I have used the expression "opening up a crevice" in my testimony; of course, there is nothing solid about this sludge ball and the effect of opening up a crevice is to open up cracks throughout the mass.

X Q. 38. That sludge ball is saturated material, it is not, it is wet?

A. It is damp.

X Q. 39. And you crack damp material by rotating a round wire in it, is that your theory?

A. Yes, sir.

X. Q. 40. Now, in the operation of the Baldwin lamp, you rotate the wire, do you break it up, give it several turns?

A. Yes, sir.

X Q. 41. Can you rotate the wire of the Baldwin lamp as it stands there now?

A. Yes, sir.

X Q. 42. How far?

A. (Witness rotates wire.)

X Q. 43. Do you not know it to be a matter of practice that the rod is reciprocated vertically in the general manipulation of these lamps?

A. No, the directions state to turn the rod and I might say that I had one of these lamps and operated it before I was retained in any of this litigation and I had always turned mine to bring up the flame.

X Q. 44. Is there any different effect in reciprocating the rod vertically or turning it upon its own axis—is there any different effect in increasing or decreasing the flow of water?

A. Well, it is possible that when you vertically reciprocate the rod you might create a sort of pumping action because if you draw the rod far enough into the tube you will have a water filled space under the rod and then when you push the rod down you will expel that water.

(I would like to note that I turned the stirrer in response to the request for a demonstration and after a little while the flame increased, or came up.)

X Q. 45. Please state whether or not there is any different action, in so far as the flow of water is concerned, between the Baldwin lamp of the re-issued patent and the Baldwin lamp of Fig. 6 of the original patent of 1900 with the foraminous tube in it?

A. Yes, sir, certainly.

X Q. 46. There is a difference?

A. Yes, sir.

X Q. 47. That is, insert the perforated tube of the original Baldwin patent in that structure—what is the difference in operation of the lamps in so far as the water regulating means there is shown?

By the Court:

X Q. 48. He says to take the Baldwin perforated tube of the original patent, the so-called abandoned patent, and insert it into the present re-issued structure and what is the difference between that action when so inserted and the action of the Baldwin re-issued lamp?

69 A. There would be too much water feed. Many times too much, in all probability, because the sludge ball of course, has an effect in cutting down or assisting the cutting down of the flow, as well as the retarding surface in the tube. Of course, in the original Baldwin lamp the regulating valve is provided which can be adjusted as finely as desired and in addition to that, of course, the lamp would have an entirely different character of operation and would not have any of the mechanical attributes, or characteristics that I took up before in my testimony.

By Mr. Offield:

X Q. 49. So that the formation of the sludge ball at the lower end of the water tube of the Baldwin lamp in your estimation is one of the essential things to the successful operation of the lamp?

A. Yes, sir, that in combination with the water feed.

X Q. 50. In defendants' lamp is the valve as employed in that lamp capable of regulating the flow of water to any extent?

A. No, you said the valve, did you not?

X Q. 51. Yes?

A. No.

X Q. 52. In your estimation it is merely a valve that is capable of opening the duct or capable of closing the duct?

A. Yes, sir, unless extraordinary careful manipulation is exercised such as a scientist or laboratory assistant might exercise.

From an ordinary practical standpoint it cannot be manipulated except to shut off and turn on the flow.

X Q. 53. In view of your study of the Baldwin re-issued patent, what is the reason for extending the water tube into the carbide compartment for a considerable distance?

— Well, I enumerated a large number, I think about twelve reasons in my direct testimony.

X Q. 54. One of the reasons was that you wanted to get the water tube into the carbide mass?

A. Yes, sir, that was the reason for extending it—one reason.

X Q. 55. Another reason was that you wanted to get the long water tube from the water compartment downward?

A. It is not absolutely necessary that it go downward in order to give the retarding surface that I spoke of.

X Q. 56. It may be twisted or curved, or something of that kind?

A. Well, that would introduce other problems that I would have to separately consider.

X Q. 57. What reason was there for extending the water tube into the carbide other than to get the end of the tube buried in the mass, or to get a long frictional surface between the top of the water tube and the bottom of the water tube?

A. To get the numerous effects that I spoke of. For example, to get the screen effect, to get the dust laden gas away from the outlet.

X Q. 58. Well, that is an advantage that is inherent in any tube that extends into the carbide, but my question is from the viewpoint of the patent, we will say, what was the reason for extending the tube into the carbide?

A. I do not understand the question any differently than my previous answer, that is to get the various conditions that I have spoken of.

X Q. 59. Please state what is the meaning of the word, in your estimation of "considerable" in Claim 4?

A. The words are "extending a considerable distance into the latter." I think that means what is otherwise expressed by a statement "introduces the water into the body of carbide which said receptacle is designed to contain." In other words, carried well into the mass of the carbide in the container.

X Q. 60. In your understanding for the operation of the lamp, should the tube be carried into the carbide into the middle of the body?

A. It should certainly be carried well below the surface of the carbide when it is in its fresh condition.

X Q. 61. Would it make any difference in the operation of the lamp if it were carried within a quarter of an inch from the bottom of the carbide chamber?

A. I do not see that it makes any difference if the tube is a little longer than is shown in my drawings so long as it be long enough to reach well below the surface of the carbide.

X Q. 62. Now, supposing the water tube was a little shorter than that shown in the drawing, to simply come in contact with the top

surface of the carbid, would that make any difference in the operation of the lamp?

A. Yes, sir, that would obviously make a difference because in that case there would be no opportunity for this ball of sludge to form.

X Q. 63. That is, no sludge ball would form around the mouth of the water tube if the tube merely came in contact with the top surface of the charge of carbid?

A. No, sir, not the same way at all.

X Q. 64. Why not?

A. Because the tendency of the carbid when it hydrates, is to hydrate in a very light and feathery manner, and if you did not have the water tube imbedded, the sludge ball does not attain any such consistency as I described, but would be simply dry particles without any effect—

72 X Q. 65. Isn't it a fact that from your own drawing that if the water tube only came in contact with the top of the carbid that as soon as the carbid was hydrated, the unslaked carbid would be pushed up beyond the end of the water tube and the hydrated carbid would form around the mouth of the tube?

A. No, that is not the effect, if I understand the question. Well, my answer was that would not be the operation.

Recess until 2 P. M.

After Recess.

2 O'clock P. M.

ALFRED R. PROCTOR resumes the stand.

Cross-examination continued:

Mr. Offield: Just one question, I think, that I want to ask this witness, your Honor.

Br. Mr. Offield:

X Q. 66. Is it not a fact that the gas pressure within the carbid chamber of the Baldwin lamp has the effect at all times of retarding the flow of water through the tube?

A. Yes, to this extent, that the gas pressure in the container directly opposes the head of the water afforded by the height or the reservoir. There is, therefore, a differential had between the number of inches of the water column and the number of inches of the gas pressure in the container. That differential may be termed
73 the effective head and to that is to be added, of course, the absorptive effect of this ball of sludge at the bottom.

X Q. 67. But irrespective of the absorptive effect of the carbid, or the effect of the ball of sludge in the mouth of the tube, it is a fact that there is a constant back pressure upon the water column so long as there is gas pressure within the carbid chamber?

A. Yes, but it is necessary to bear the fact in mind that the gas pressure does not directly reach the outlet of the water column because there is this interponent ball of sludge.

X Q. 68. It has to pass through the body of the carbid and through

the sludge, but it ultimately reaches the mouth of the tube so that there is a gas pressure on the water column?

A. Yes, it reaches it, except the effect is modified by the interponent parts.

X Q. 69. Interponent subject matter that may be at the mouth of the tube. That is all.

A. Yes.

Redirect examination by Mr. Rice:

Re-D. Q. 71. Will you state, referring to this last question, what that difference in pressure is, in figures, that is, the amount of pressure in gas inches which the Baldwin lamp will sustain, operating normally with the end buried in the carbid and the pressure which would be sufficient to cause a blowback if the sludge were not around the mouth of the tube?

A. Well according to my experiments, the actual plaintiff's lamp, with the water tube imbedded, will operate continuously and successfully with water pressures of between $2\frac{1}{2}$ and 4 inches, and there will be no blowback of the acetylene through the water tube under these conditions, and no interruption in the water flow. On the other hand (if the tube is not imbedded in this way the gas
74 will blow up through the water tube at about the pressure I mentioned.

Re-D. Q. 72. What pressure?

A. $2\frac{1}{2}$ to 4 inches, and of course under those conditions the feed will be interrupted.

Re-D. Q. 73. How did you determine by your experiments how much pressure the lamp would stand without a blowback?

A. By the use of a pressure gauge, which, for that particular experiment, I applied directly to the burner so that I could run the pressure up beyond its condition in normal working.

Re-D. Q. 74. What was it?

A. How high was the pressure.

Re-D. Q. 75. Yes.

A. Well, it varied under different conditions. Under some conditions the pressure would run up as high as twelve or fourteen inches, a remarkable result, without any blowback. That, of course, is very much higher than any pressure ever attained in practice.

The Court: What is the pressure attained in practice if you know?

The Witness: Between two and one-half and three and one-quarter inches, as an average, but it fluctuates either side of that for about an inch more.

Re-D. Q. 76. Referring to this Baldwin patent No. 656,874, the water feed, if I have understood you correctly, in this patent is determined by this valve D?

A. Yes, sir.

Re-D. Q. 77. Will you state briefly what the difficulties, if any, are in attempting to control a feed of water through a tube in a lamp of this character by means of a valve solely?

75 A. By the expedient of using a regulating valve which can be finely adjusted, it is, of course, theoretically possible to obtain as slow a feed as is desired, but practically the use of such a valve is subject to the objection and difficulty that it is hard to adjust. It requires considerable care to adjust it to just the exact speed, and perhaps some experiments to know just what the effect is going to be. And furthermore, after it has been adjusted, it is likely to require readjustment because the crevice afforded by the valve is so minute that it will trap the particles in the water and the flow will be changed so that the valve will be required to be readjusted. That is a second point. First, the difficulty, and second the necessity of change. And thirdly, the valve is liable to corrode and is somewhat troublesome to construct and difficult to make and liable to get out of order and so forth.

Re-D. Q. 78. Can you give the Court any idea about the crevice, the size of the crevice necessary to produce the proper feed of a lamp of this character?

A. Yes, I have here a drawing which I have entitled "Amount of valve opening 20 times enlarged, giving the same as the Baldwin flow. That is, the width of a crevice on the same scale as the drawings of my diagram entitled "Proctor flow diagram," and it will be seen from that how likely the valve opening is to collect the minute particles of sediment in the water and become obstructed. This white line represents the crevice. It is a scale width about equal to the opening of the valve.

Re-D. Q. 79. That, you say, is enlarged twenty times?

A. Yes, sir.

76 Mr. Rice: I offer in evidence the diagram just referred to by the witness as Complainants' Exhibit 12, illustrating the valve opening.

Same received and marked Complainants' Exhibit No. 12.

Re-D. Q. 80. You testified, as you have said, in the suit of John Simmons Co., and Baldwin against Grier Brothers in Pittsburg?

A. Yes, sir.

Re-D. Q. 81. I hand you Complainants' Exhibit No. 6, Grier Brothers Lamp, and will ask you to state whether or not this is the lamp in that suit?

A. It is.

Plaintiff Rests.

Defendant's Testimony.

HOWARD M. COX, called as a witness in behalf of the Defendants being first duly sworn testified as follows:

Direct examination by Mr. Offield:

Q. 1. Please state what education and experience you have had that enables you to qualify and testify as an expert witness in matters pertaining to letters patent?

A. I graduated twenty years ago from the University of Michigan at Ann Arbor, Engineering Department and for three years there-

after I practiced engineering. I then studied patent law, became a patent solicitor and expert and have done nothing else ever since.

Q. 2. Have you read, and do you understand the specification involved in re-issue patent No. 13,542 of March 11, 1913?

A. I have and do.

77 Mr. Offield: I might state, your Honor, that instead of proceeding first to a comparison between the re-issue patent and the original patent from which it was re-issued for the purpose of showing the invalidity of these claims as re-issue claims I am going to follow right on now into the prior art while this matter is still fresh in your mind in order that we may show your Honor the prior art structures and I think you will follow it better than in the original outline of the case.

Q. 3. Please state whether or not acetylene generators, or acetylene lamps uniformly have a water reservoir, a receptacle for calcium carbid and some means for conducting the water from the water receptacle to the calcium carbid?

A. They all do except in that type of lamp where the carbid is dropped in, or otherwise conveyed to the water, but there are two general types of lamp and what you state is true of this type under consideration.

Q. 4. Both claims, one and four of the reissue patent have the following elements in them "a tube extending from the former a considerable distance into the latter so as to be imbedded into the mass of carbid contained in said receptacle." Please state whether or not you find in any prior art patent a construction in acetylene generating apparatus in which the water tube extends from the water reservoir a considerable distance into the carbid chamber so as to be imbedded in the carbid.

78 Mr. Rice: If the Court please, I object to that question on the ground of the inclusion of claim 1. We have not relied upon claim 1. I may say that there might be reasons why there would be a discussion as to an infringement of claim 1, which we have not—I don't mean to state here that we might not consider claim 1 infringed, but there is argument on the subject of claim 1 which is not present as to claim 4. As we are satisfied to rely upon claim 4 I do not see why the time of the Court should be wasted by dragging claim 1 into this litigation.

Mr. Offield: The time of the Court is not going to be wasted, your Honor, for the same clause and this same element appears in both claims so that the answer of this witness as applicable to claim 1 is just as applicable to claim 4. I include both the claims in here because the same answer meets the same element in each of the claims. Outside of the question I submit to your Honor that irrespective of the fact that complainant has abandoned claim 1 in this case, I submit to your Honor that we are entitled to show in this proof the invalidity of that claim, that every element of that claim is met in the prior art, and it is our expressed purpose to bring before your Honor the distinction between claim 4 and claim 1.

Mr. Rice: That, of course, if your Honor please, is going to bring

up the question here as to whether Mr. Offield's statement as to the validity of claim 1 is correct. Now, I challenge that statement and

79 I do not think he can show that claim 1 is invalid, but if we are going to try out that issue of course this litigation is going to take a much wider scope both as to the references involved and as to the rebuttal testimony and all that sort of thing.

The Court: My view of the matter is this; you can, for instance to illustrate, go to the file history and show the whole condition which would be inclusive of claim 1, but we are bound to try only the issue before us and that is claim 4. You may have much to say by way of argument or not, I don't know in respect of the construction of claim 4 in the light of the specifications, but we are only dealing with claim 4 here and it would only tend to confuse the issues to interject possibly something that is not in the case. Of course, this particular question is a matter of no consequence.

Mr. Offield: It is simply the questions that are going to follow from this particular question. Every element of claim 4 is in claim 1 except the last clause, "the rod operating to restrict."

Mr. Rice: Your Honor will also notice a slight difference in the definition of the stirrer. Claim 1 says "formed as a stirrer," whereas claim 4 says "constituting a stirrer." Now there may be a very large amount of argument in the question as to the difference between "formed as a stirrer" and "constituting a stirrer."

The Court: Yes, I understand that perfectly.

Mr. Rice: And for that reason and to eliminate the argument on that point, we have, inasmuch as our rights are fully
80 protected here as to this lamp by claim 4, in order to simplify this case as much as possible—

The Court: I think it straightens itself out very readily. If claim 4 and claim 1 have the same elements why you don't gain anything by dragging in claim 1. Insofar as they have different elements, then you must confine yourself to claim 4. I will confine the expert testimony to claim 4.

Mr. Offield: That question will be revised then.

The Court: That question may be deemed revised as referring solely to claim 4, Mr. Cox.

The Witness: I will first call attention to the Lee patent, 619,046.

Q. 5. What is the date of it?

A. Issue February 7, 1899. By referring to the left side of the figure it will be noted that the carbid is contained in the bottom of a receptacle marked L.

Mr. Rice: Is that set up in the answer? I don't seem to have a copy of it. I don't think it is in the answer, but it was in the Pittsburgh case, go ahead.

The Witness: The water is introduced through a pipe W, which comes up through the bottom of a cone shaped element marked M'. There is a central opening, M, through which the water exudes or flows and by this cone shaped element the water is distributed uniformly to various parts of the vessel in which it is contained. There

81 are a number of small tubes, M-2, which issue from this, and they go into the carbid mass at various elevations. Some enter above the carbid and some open up near and beneath the surface and others go down almost to the bottom.

The Court: This is for generating.

The Witness: This is in a stationary plant, yes, sir. It shows the idea, however, that the introduction of the mouth of the tube into the mass was practiced at that time. The broad idea of introducing the water into the center of the mass is certainly shown in this patent.

The Court: Can you put your finger on any reference in the specification to that particular feature?

The Witness: Commencing on page 1, line 103, the specification reads: "At the upper end of this tubular extension is a distributing M into which the water is delivered. The lower part of this distributor has a cone M, formed in it so that the water delivered at this apex flows down over the sides to the periphery at the bottom of the distributor chamber M. From the bottom of this chamber pipes, M-2, extend downwardly, these pipes being of different lengths and having their discharge openings at different distances from the center of the carbid chamber 1, so that the water, after flowing down the distributing cone M, passes out through these pipes and is delivered into the mass of carbid contained within the chamber at points all through the mass.

Mr. Rice: Your Honor, since this has been read into the record.

82 I would like to have him, if he will be so kind, read in the next ten lines and I think that will dispose of that.

The Witness: I will do so. "The mass of carbid is thus acted upon by the water at all points and will produce gas simultaneously through the whole mass. I thus achieved two points, first, the rapid manufacture of the gas and secondly, in the utilization of the whole mass of carbid, and avoid the retardation of the work which is caused by a crust forming upon the top of the body of carbid when the water is only supplied at one or two points."

This patent was referred to simply for the broad idea of introducing the water at various points into the center of the mass through tubes having open mouths in the mass.

In the Buffington-British patent, (which is No. 6), various forms are shown. This is No. 23,802 of October 15, 1897. Calling attention to Fig. 7, the carbid is contained in the chamber marked 3, I believe, and it has in its center a tube 4 which has a mouth near the bottom of the carbid chamber. This tube has a number of orifices in it throughout its entire height and the tube is surrounded by a porous material, or absorbent, for increasing the distribution, and thus the water is introduced at various points in the mass.

In Fig. 2, also, the open mouth of the tube is near the bottom of the carbid container.

In Bundy, 608,571, issued August 9, 1898, the tube is imbedded in the mass, having an apertured tube E in the carbid container, C. The water is introduced through a pipe from above and the

apertures are located the entire length of the tube from top
83 to bottom so that the water will enter at all points.

In Baulieu, 611,885, issued October 4, 1898. This is an other stationary plant but it shows a pipe, O, which has a water tube and the lower end of this tube is located near the bottom of the mass. Now the——

The Court: Before we leave those, what function do these tubes perform?

The Witness: They introduce the water into the mass of carbid and the caking, and all that would be the same as in any instance of that construction. The idea of introducing it, or imbedding the tube in the mass of carbid, is shown in the various constructions. The phrase is, I believe, "a water tube extending from the former a considerable distance into the latter and adapted to be imbedded in the mass of carbid."

In the Handsby Patent, No. 591,132, issued August 5, 1892. This is a lamp patent, a portable small lamp, and has a water reservoir B at the top and a carbid container D at the bottom, with a water tube H extending from the water reservoir to the carbid container. The lower end of the tube H extends a considerable distance into the carbid container and is embedded in the mass of carbid. A central rod D' is in this particular form shown in the drawing secured to the floor of the carbid chamber and extends up through the water tube and has at its upper end a valve G. This co-operates with a valve seat formed in a diaphragm F, which is described as being flexible and constructed in this case, I believe, of rubber. The

84 gas pressure in the gas chamber, of course, varies with the generation of gas and the theory of operation is that as the pressure beneath the diaphragm increases the diaphragm is raised up to meet the valve and thereby throttles the flow of water and reduces the generation of gas until the balance has been restored. As the question is limited to this feature of the mouth of the water tube, or the tube being imbedded in the mass, I will not refer further at this point to this patent.

In Iden patent, 637,934, issued November 28, 1899, the carbid container is marked B and the water chamber is above it and marked A'. There is a funnel shaped tube leading from the water chamber to the carbid container marked b3 and this water tube extends a considerable distance into the carbid container, and in all probability would be imbedded in the mass either at the very beginning or soon after the commencement of operation. The length of the tube can be noticed from Fig 2 and by laying this off in Fig. 1 it would appear that the tube extends a considerable distance and would probably be imbedded in the mass of carbid.

In the Strakosh patent, 610,150, issued August 13, 1898, is shown a portable lamp of the bicycle type, or similar type, and is provided with a drum at the bottom having a capacity for three carbid cartridges, so-called. In this patent the carbid cartridge is described as a paste-board, or paper container, having carbid in it and this, in the operation of the lamp, is punctured by the lower pointed extremity of a part 12. This part is a sleeve, or tube, having a ver-

tical slot 9 and the water is introduced to the exterior, and through the slot by a filter arrangement, which need not be described. In the operation of this device the rod, 8, which carries the tube is vertically movable and is held raised when a fresh charge is brought beneath the perforating point. When the operator depresses the rod and punctures the container or cartridge, the water flows down to the very center of the mass.

The Bundy patent, 660,889, issued January 3, 1899, has a special water tube leading down into the carbid container and this has an opening *f* near the bottom and the water passes through this opening into—the central tube is surrounded by a porous container and the water percolates through this and reaches the carbid.

In the Peck patent, 622,015, issued March 28, 1899, the carbid container contains a special tube, *G*, and within this is a smaller tube *A* which contains water and extends from the top to the bottom of the carbid container and the patentee describes the operation by saying, "that the water is fed down through this inner spiral tube, *A*, and issues from the crevices thereof during its entire length." This shows the idea of imbedding the tube in the carbid and introducing the water at various elevations therein.

The Schmitt-British Patent No. 15,688, issued July 18, 1898. This is a type of a lamp of the kind under consideration, being shown apparently in the form of a bicycle lamp, and by the way there is, I believe, a model of this lamp which can be referred to. In this, the carbid container is marked *A* and the water container above it *B*. There is a duct leading from the water to the carbid container and this duct incloses, or the portion of the duct has a stem *a*. At the lower end of the stem is another duct marked *g*. The water is led into this part *g* through a tube or a wick, depending on the different forms of the lamps shown, and the mouth of this extends down a considerable distance into the carbid receptacle and is adapted to be imbedded in the mass of carbid. The drawing shows the carbid in fresh condition, apparently, and it shows the chamber a good deal less than half full. It is the practice, I believe it is the instruction in fact by the makers of these lamps to instruct the user to fill the carbid container approximately full. As a matter of fact I think in practice it is usually filled a good deal more than this, but in any event in this Schmitt construction, it would not be long before the mouth of the tube would be imbedded in the mass of carbid even if it were not imbedded at the starting of the lamp. It will be noticed that the carbid container here extends up almost the same height above the mouth of the tube as it does below it and while it is restricted, or tapered down near the top, the capacity of the container above the mouth of the tube would be between a half and a third of that below it.

The Court: The principle, apparently, is entirely different, isn't it? The intent says here "Can be moved up and down from outside the lamp in order to clear the outlet opening" *g*.

The Witness: Your Honor, the water is led down through this curved tube *G*, the function being to avoid the effect of vertical vibration. The water is then led past the valve into what might be

termed a valve seat and duct combined, and the mouth of the water duct, and the only duct that lets water into the carbid container, is down, by measurement it is about half way between the top and the bottom.

The Court: What is this? It says here "Lime and other obstructions?"

87 The Witness: By "lime" he means sludge, and of course the invention is not a question of words. It is a question of things.

The Court: I am trying to find out what he referred to when he said "lime," whether that is the same thing.

The Witness: I understand it was said this morning that it was lime, that is, the dust resulting from the generation of the gas, and that was applied to that by Mr. Proctor this morning, so whether you call it sludge, or lime, that word I remember was referred to.

The Court: We can deal with the latter.

The Witness: The Schmitt patent obviously shows a construction in which the mouth of the water tube extends a considerable distance into the carbid container and it certainly is adapted to be imbedded in the mass and it will be imbedded in the mass in the normal operation very soon, if not instantly.

I agree with some statements already made that the patent drawings can't always be relied on for details and whether a user of this lamp would fill the amount of carbid in there that the draftsman would put in or not would be varied with various individuals, I presume.

Gaston, No. 668,288, issued February 19, 1901. This shows a plant in which the carbid container is marked 28, or the outer shell thereof at least. Within this is a basket which contains the carbid. Within the center of the basket or container is a tube, 37, which is a water tube and leads from a water supply 45 shown on the left side of the figure.

88 The central water tube terminates near the bottom of the carbid container, the end of the tube being open and in addition there are a number of orifices through which the water may escape into the carbid. In this patent, therefore, there is the characteristic of a water tube extending a considerable distance into the carbid container and adapted to be imbedded in the carbid mass.

Barratt-British Patent No. 2,699, issued February 7, 1899, the water chamber is marked A and B and the water is led from the chamber through a tube, which is not marked, but is shown at the center near the bottom of the figure. The carbid container is not shown in this patent because the patent dealt with a certain water trap and carbid chamber cannot be stated as to size, but if we assume that the normal practice would be followed in which the carbid receptacle and the water receptacle are approximately the same size, unless the shape were very unusual the tube would extend into the mass. The tube does extend down a considerable distance from the water chamber and is adapted to be imbedded in the mass of carbid.

Hallowes and Tucker, No. 644,910, issued March 6, 1900. This

shows a bicycle lamp operating on a somewhat different principle in that the flow of water is inverted. In this patent the carbide container is marked A. Through the center, leading up from the bottom of the carbide container is a water tube O. The bottom of the tube is controlled by a valve K and the water is supplied from a water container which is both above and below the carbide chamber. The tube, however, does extend a considerable distance into the carbide chamber, in fact, it issues exactly at the middle and the tube is imbedded in the mass of the carbide.

In Windham British Patent No. 20,537, issued September 3, 1898. This is a portable lamp and was similar to one or two previous constructions. It has a carbide container in which there is a central tube L, and this tube receives water from the water chamber above and is provided with several orifices at different heights for permitting the emission of water into the carbide mass.

The Holiday British Patent 24,360, dated October 18, 1898. This patent shows, for example, in Fig. 1, a carbide container *a* above which there is a water receptacle *c*. There is a central duct or passage leading from the water to the carbide chamber marked *c2*. This extends a considerable distance into the carbide receptacle and is shown to be just above the carbide as it happens to be drawn in the patent. It has a wick *d4*, in addition, which is described in the patent as performing the function of making a uniform flow at all times into the mass. This reference I don't consider of great importance in this connection for the wick functions, but the general phraseology is responded to by this patent also.

Mosher Patent No. 644,439, issued February 27, 1900. This shows a small portable lamp having a water receptacle B above, and a carbide container C below. A water duct or tubing D leads from the water to the carbide container and at the lower end thereof has a conical element, E, through which the water issues to the tube surrounding it. This tube terminates near the bottom of the carbide chamber and thus extends a considerable distance into the carbide container. It will not come in actual contact with the carbide mass except as the carbide will creep in between the various apertures in the surrounding tube. However, I imagine in normal operation the carbide would collect and imbed the water tube. That is all.

By Mr. Offield:

Q. 6. Please state whether or not you find in the prior art any patents wherein a rod extends through the water tube and has a stirrer at its lower end. In pointing out references of patents in the prior art, you may only select those which actually show a stirrer as distinguished from rods which extend though the water tube and have merely a straight end which projects into the carbide?

A. The Kerr patent, 596,937, of January 4, 1898 shows a construction responding to this question. The carbide receptacle is not marked in Fig. 5 of the drawings, but is located at the bottom of the tube D. The water receptacle is marked B and is shown at the right side of the figure. The water is introduced through a siphon

arranged from the water receptacle to the carbid receptacle and from this into a water duct B' shown here in the upper central portion of the figure. Extending down from this part B' is a tube marked V. This tube acting as a down take for water, and co-operating with the tube E,' these two parts co-operate as a telescopic water tube to take care of a certain vertical movement required in the operation of the apparatus, but the two parts together form a water tube. Extending down through the water tube is a rod, D,' and this at the top has a hand wheel, and at the lower end a cross rod, which is described as a stir for breaking up the carbid at the lower end of the water tube.

91 The Court: Now what does that do in that generator?
This is rather complicated, or a more elaborate piece of mechanism.

The Witness: Yes, I don't mean to take your Honor into the—

The Court: No.

The Witness: Reading from the specification, commencing line 1, page 2, "D¹ is an agitator rod extending downwardly through the water supply pipe J¹, and having an agitator connected to its lower end." The function of this cross piece at the bottom, which is apparently not supplied with a numeral, is to break up the sludge which may form around the bottom of the tube, and the function of the parts so far as the question touches it, is precisely the same as in the recital of the patent in suit. That is, there is a carbid container with a water supply above, a duct, a tube leading from the water supply to the carbid container and having its opening, or mouth, near the bottom thereof, a rod extending up through the water tube from the carbid container to a point where it may be manually operated. The rod is provided at its lower end with a stir which is located in proximity with the lower end of the water tube.

Gaston Patent, 668,288, has a water tube extending down into, and largely through the carbid container, and having a rod, 38, extending down through the tube, and provided at the lower end with a part marked 39, which is shown in plain detail in Figs. 3 and 4. By rotating the rod 38 by means of the handle 40, which is provided for it at the upper end of the device, the sludge and
92 lime may be removed and the action of the water with the carbid facilitated. That is all.

By Mr. Offield:

Q. 7. Please state whether or not you find in the prior art any acetylene generating apparatus in which a rod extends through the water tube and which rod operates to restrict and thus control the flow of the water to the carbid?

A. Marechal, et al, British Patent No. 29,405, issued August 27, 1898. This patent shows a water container, or reservoir, A, above, the carbid container B below and the two being connected up by water tube or duct, D. Co-operating with the duct D, and forming a portion of the duct is a water tube E, which leads down a considerable distance into the carbid container, and I might have re-

ferred to this patent possibly in the former question as to a tube leading down into the carbid a considerable distance. Within the center of the water tube E, is a rod or wire G which is supported by a button H, and the top of the tube E. Reading from the specification, commencing line 8, page 1, "Our invention consists essentially in providing a feeding tube of small caliber in which a thread or wire is provided by means of which the capillarity of the tube is increased, such tube having its lower extremity outwardly flaring, while the lower extremity of the thread or wire exceeds the length of the containing tube. Our invention is designed to obviate the irregularity in working, which is usually attendant upon the use of capillary tubes of small diameter in apparatus of this class,

93 which is caused by the deposit of sediment or impurity contained in the water, as well as by the deposit of lime B upon the tube by which its lower orifice rapidly becomes stopped *stopped up*." In the specification near the top of page 2 the so-called "thread G" is referred to as metallic, or being a wire. Reading from near the center of the page "The operation is as follows: the receivers are charged respectively with water and carbid and the cock C" is turned to admit water which immediately issues into the small tube E, and forms into drops as indicated in the figure, and descends upon the carbid in the receiver, whereupon the gas is immediately generated and the pressure attained affects the regulation of the admission of water, which thereby is automatically regulated, upon the consumption of the burner. The vapor carrying lime is condensed upon the interior of the receiver and upon the tube, but the water passing out along the thread carries the particles of lime away and so the lime falls with the water upon the carbid instead of accumulating to obstruct the passage of the water. The projection of the thread or wire, from the mouth of the tube, E, facilitates the draining of the water while the thread, or wire, may be readily withdrawn from the tube for periodically cleaning the tube." This patent, therefore, merely shows the construction in question, the water tube having a central wire which extends down below the mouth of the tube and which serves to produce an automatic regulation of the flow of water from the water container to the carbid container. The statement is very plain that the operation is automatic as the quotation I have read includes the specific statement.

Referring to the Handsby patent, 591,132, there is a water tube provided with a central rod, and the rod necessarily restricts
94 and retards the flow of water. The specification however, does not explain or specifically recite the restricting, although the restricting action in the water tube is necessarily present and the parts are such in the drawing itself, as would lead one to suppose that that had some effect.

Peck, No. 622,015 has already been analyzed, but I would call particular attention to the fact that the central rod, F, which is located within the Helical closed coil A restricts the flow of water in this coil or water tube. The patentee says, commencing near the bottom of line 1, page 1, "within the tube A I locate a fine water spread wire, F, which spreads the water in its passage downward

through the tube and compels it to engage with the coils thereof, by which it is frictionally retarded."

It is obvious that the patentee employs the rod and the coil to restrict and control the flow of water from the water container to the carbide receptacle.

In the Schmitt British patent, which I have referred to, the part F, which is the water duct leading from the supply to the carbide container, has a wire or rod, *b*, extending from the top of the lamp to and through the bottom of the water tube.

The patentee does not recite the constricting of the water passage, but shows a rod which necessarily operates to restrict and to control the flow of water down through the water tube. In this connection I would call attention to a publication of this Schmitt patent in which this specific feature is recited in words. I do not attach any great importance to the fact that one recites——

95 Mr. Rice: I want to know what this is, whether this is in anticipation, or to show the state of the art, or what the purpose of this is.

(Discussion omitted by direction of the Court.)

The Court: After informal discussion with counsel, it is understood that this publication is received solely on the state of the art, and not as evidence of anticipation. If there is any controversy as to the correctness of the translation that may be straightened out later on in the case.

The Witness: I do not attach any great importance to the fact that one recites specifically that the rod restricts the tube and thus controls, for the operation results from construction and not from a description of the construction. This prior publication, however, seems to specifically bring out this characteristic in operation in so many words, and I refer to it for this reason. The document in question purports to be, and I believe is a photographic copy of page 116 of a publication entitled "Dingler's Polytechnisches Journal", published in 1898. This evidently is a German trade, or scientific journal, and reading from a certified translation, it describes a Schmitt acetylene bicycle lamp. I have no definite information that this is the same Schmitt as the patentee of the Schmitt British patent, but the illustrations are precisely the same, and I assume the patentee and the Schmitt of the scientific article to be one and the same person.

In this publication is described in general the same thing that is described in the Schmitt British patent, but employs different words and is somewhat more brief, being for general
96 reading.

Near the middle of page 2 of the translation of this journal article is the following:

"For regulating the water feed and preventing the clogging up of the water drop hole, a wire, E, is inserted in the tubular end of the water drop valve."

In this trade publication or journal, the person Schmitt has been a little explicit in describing the function of the central wire which

passes down through the water tube. The constructions shown in the drawings of the patent and the publication are precisely the same and I conclude that it is evidence that Schmitt knew that the wire would restrict and automatically control the flow of water through the water tube.

In the Barratt British patent, No. 2699 of February 7, 1899, there is no description of the water tube and valve, the reason evidently being that the patentee was claiming a specific form of water trap in his water receptacle. However, the water tube and the central rod, or wire, G, are shown to be so proportioned in the drawing that the effect of the rod would necessarily be to constrict and control the flow of water in the water tube.

Hallowes and Tucker, patent No. 644,910, which I have previously analyzed, shows the water tube O, the outlet whereof is located in the center of the carbid receptacle. Through this water tube in which the water flows upwardly is a rod H, which is manually controllable from the upper end of the lamp. The patentees say, commencing page 2, line 84: "The water inlet controlled by the plug

97 K should be so proportioned with relation to the capacity of the burner that a predetermined generation of gas will take place, which is sufficient to furnish a supply of gas to the burner corresponding to the capacity of the lighter, thus insuring a steady flow of gas to the burner, which effectually prevents flickering, and produces an even steady flame. This equalization of the generating capacity of the lamp, and its gas consuming or burner capacity, renders the lamp automatic or self-controlling." This patent, while it shows a valve, is dependent for its regulation upon the tube and the rod and the gas pressure operating upon the mouth of the tube in the patented construction in question. The parts are inverted in the sense that the flow is upwards instead of downwards, but this is another instance of the fact that the expedient of restricting the water tube by employing a central rod, and utilizing this combination to restrict and automatically control the flow of water in the water tube was a common and known expedient and apparently was known abroad and known here and published in both places.

Another patent showing the idea and describing in so many words the idea of restricting the flow of water in the tube by means of a central rod is the Watt Patent, No. 638,898. In this patent there is a water chamber above, carbid chamber beneath, a duct leading from one to the other, and a water tube or valve seat, G (the part performing both functions): passing down through this duct and valve seat is a rod or stem, 10, and the patentee says, commencing line 86, page 1: "The lamp is automatic and the feed of water is controlled by the flow of gas allowed by use of the gas valve."

98 I would call particular attention to the fact that it is the gas valve, and not the water valve which renders the lamp automatic, and it is obvious that the automaticity does not depend upon manual control of the gas valve. Manual control cannot be called automatic, and while this is a single sentence out of the ap-

plication, it is obvious, I think, that the control of water is due to the proportioning of the water tube to the constricting wire.

The same is true in the William patent, No. 619,814, issued February 21, 1899. In this patent there is a water receptacle, 4, beneath which is a carbide receptacle 3. Leading from the water receiver to the carbide container is a water tube 5, having longitudinally in the centre thereof a rod, G, which at its lower end passes into a tubular extension, *g*, at the lower end of the water tube. The lower end of the rod is cut away on a taper at 13 so that near the upper end of the taper, the remaining cross section of the wire is less than at the lower end. The idea is that by changing the diameter, by moving the rod G vertically, or rotating it, the tube can be cleaned. In the normal operation the proportioning of the water tube and the rod apparently renders the lamp automatic.

The Mosher patent No. 644,439 describes this automatic regulation of the flow of water by reason of a rod restricting the water tube. In fact, the disclosure in this Mosher patent of that principle is extremely clear and probably more elaborate than necessary in a patent.

Mr. Rice: This patent is also not set up in the answer, if your Honor please. We have never seen this until this examination 99 began, I suppose if this is received at all it will be on the same basis. We don't know what is in it.

The Court: Yes, only on the prior art.

Mr. Offield: I was just able to get copies of that this morning. This is just showing the state of the art.

The Witness: If it were not for taking too much space I would like to read most of the specification into the record, as the entire patent is explanatory of the principle in question. Selecting parts of the specification, however, the patentee says, commencing line 36, page 1, "In lamps of this character, automatic regulation is usually dependent upon and it is accomplished by so arranging the delivery end of the water tube that an excessive development of pressure of gas will have the effect of checking the flow of the water, and it is to this feature of the lamp that the invention forming the subject of the present application relates.

"The tube D, leads nearly but not quite, to the bottom of the generating chamber C. Into its lower end is tightly fitted a plug E, for a central longitudinal aperture *c*, within which is located a loose fitting rod, F, which is of such a length that it may reciprocate within the aperture of the plug E, without being removed therefrom. This rod is provided with a head *f*, *f'*, at each end preventing it from dropping out of the plug when the parts of the lamp are separated, and also preventing it from sliding upwardly into the tube, D, should the lamp be accidentally overturned. The rod, F, may be provided with annular grooves, G, or a plain rod 100 may be used as shown in Figure 6. In either case, the rod is preferably of such length that when the parts of the lamp are assembled it will be raised in the aperture of the plug by the contact of its lower end with the bottom of the generating chamber C'.

"The upper end of the plug, E, is preferably sharply tapered as shown at H, and across its apex there may be such a V-shaped notch, I, although this latter feature is not of importance if the length of the rod F is such that its head, f, is raised in the assembling of the parts of the lamp as already described, and the head, f, raised directly upon the top of the plug; when the parts are assembled the V-shaped notch, e', will serve to admit the water to the central aperture of the plug. That is to say the rod is not used as a valve and serves none of the functions of a valve.

"In use, the water being admitted to the tube, D, by the opening of the Valve d, finds its way through the contracted annular space around the rod F and sets up the requisite chemical action. This discharge orifice is of so small area in cross section that the development of gas pressure within the generating chamber will entirely check the flow of water through it when this pressure exceeds that of the column of water enclosed within the tube.

"By the use of the rod several advantages are gained. I am able to reduce the width of the discharge orifice sufficient to secure this automatic control of the water while extending it laterally so that a very considerable amount of water may pass through should the demands of the lamp require. The annular form of orifice is preferable."

Commencing the last line of page 1: "By providing the rod with the *annular* grooves, G, the form of its surface is such that its longitudinal reciprocation more effectually dislodges any dirt particles which may have settled into the orifice. The rod F, while being comparatively small, nevertheless has some considerable weight and hence the jar to which a bicycle is subjected when in use will the more readily set up a continuous longitudinal reciprocation of it."

From the foregoing it would seem that the Mosher patent discloses with much detail the operation of a rod located within a water tube and so proportioned as to restrict and thus control the flow of water to the carbid.

By Mr. Offield:

Q. Please state whether you find in the prior art any patents in which the precise combination of elements as claim 4 in their precise relation and having the same functions are found. In answering this question you may consider that a straight wire projecting through the water tube is the equivalent of the element in the claim which describes the rod as constituting a stir.

A. The Marechal British patent, No. 29,405 cannot with confidence be said to form an anticipation of Claim 4 for two reasons, although I think it of sufficient interest to mention it in connection with this question. The British patent in question is evidently interested with connections between the water and carbid receptacles, and apparently for that reason has omitted showing the complete receptacles. It is for that reason impossible to say where the patentee would have put the bottom of his carbid container, but it is certain that the water tube extends a considerable distance into the

carbide container. Whether it would be imbedded in the
102 mass would depend upon how large the receptacle is, and
how much carbide would be put in it by the operator.
Furthermore, it is not certain whether, as a practical matter, the
central rod, H, could be operated as a stirrer, using the stirrer in
the broad sense of your question with the rod terminating straight,
instead of bent, as shown in the patent in suit. The rod would op-
erate as a stirrer in this restricted sense if it were manipulated, al-
though it is not shown to be within the grasp of the operator. I
mention this patent, therefore, not as an absolute anticipation, but
as coming very close to it, and in practise it may quite possibly
have been an actual embodiment of what is described in Claim 4.

The Handshy patent, No. 591,132 does, to my mind, form an
embodiment of what is claimed in Claim 4. It has the water reser-
voir, a receptacle for calcium carbid and a water tube extending
from the water tube a considerable distance into the carbid re-
ceptacle, all as recited in the claim. The water tube extends from
the water container a considerable distance into the carbid con-
tainer, and is adapted to be inserted in the mass of carbid in the
receptacle and is shown to be thus imbedded. The Handshy patent
also has a rod extending through the water tube and it does con-
stitute a stirrer to break up slaked carbid around the outlet of the
water tube as called for by the claim.

In operation the gas pressure in the Handshy lamp continuously
moves the diaphragm, F, and water tube, H, up and down. The
action, therefore, is to create a relative movement of parts at the
lower end of the water tube, and the action would be to disturb
and break up the slaked carbid formed at the mouth of the
103 water tube. This patent recites that other constructions
may be employed besides the precise one shown in the draw-
ing.

He says that the rod, G, may be fastened to the diaphragm E.
Quoting from the specification commencing line 84, page 1,
Handshy says:

"This stem may be secured to the diaphragm, E, or it may ex-
tend upwards from the valve and be secured to the top, A-2, of the
chamber, B."

The rod is not movable, and yet it would have a stirring action
in co-operation with the movable tube, and it would assist and co-
operate with the rod in producing a relative movement at a point
where the sludge is formed, therefore, while it is stationary, I think
it is not stretching things at all to regard it as having the function
of a stirrer, or co-operating with the water tube to produce a stirring
effect. Certainly the effect is there, and the rod contributes towards
the effect. The only remaining element in the recital in the claim
is, "The rod operating to restrict and thus control the flow of water
to the carbid as set forth."

The rod in Handshy does restrict the flow of water, having an
external surface and occupying space within the tube, as in all the
other patents in the art in which this effect occurs. And the rod

does control the flow of water, having in addition to the ordinary restricting effect the valve, *f*, which also co-operates with the tube.

In the Schmitt-British patent No. 15,688, which has been previously referred to, is to my mind a complete and accurate embodiment of all that is called for in Claim 4 of the patent in suit. The water reservoir is marked B in the patent drawing, the carbid container is marked A, and there is a water tube extending from
104 the water container to the carbid container. This is a two-part tube, a portion of which, G, in one form is shown as having a curve for avoiding the effects of vertical vibration. The remaining portion of the duct, or water tube, is the part F, at the bottom of the water tube, and this extends a considerable distance into the carbid container. This characteristic I have already referred to more at length, and it need only be said now that the mouth of the water tube is just about the middle of the container, considered vertically, that is, it is located about mid height of the carbid container, taken as a whole. The tube is adapted to be imbedded in the mass of carbid in the receptacle, and would operate exactly in that manner. The rod extending through the water tube called for by the claim is the part, *b*, and this rod extends through the water tube and constitutes a stirrer to break up slaked carbid around the outlet of the water tube. If we considered a straight rod to be a stirrer, as in your question, the rod is the Schmitt patent operates "to restrict and thus control the flow of water to the carbide."

In the first place the rod necessarily operates in this matter, and if there is any need for justifying this view of the matter I would call attention to the Dingler Journal publication. In my judgment, therefore, the Schmitt device embodies everything that is called for by Claim 4 and there is no teaching in Claim 4 that is not to be found in the Schmitt patented structure.

As for the cleaning effect, the specification refers to this specifically, for example, commencing at the middle of page 1:

"The spindle, *a*, of the valve, F, has an actual hole
105 through which passes a wire or needle, *b*, which extends into the carbid holder, A, and has at its upper end a button, *c*, by means of which it can be moved up and down from outside the lamp in order to clear the outlet opening, *g*, of the water supply pipe below the valve of lime, or other obstruction. By this means the lamp can always be kept in proper working order."

The patentee Schmitt understood that his lamp would operate automatically, quoting from the middle of page 1:

"By reason of the elevation of the water reservoir, B, above the carbid holder, A, a comparatively long water pipe between the said reservoir and the valve F can be employed, and thereby a proportionate water column pressure maintained when the water in the reservoir B, is nearly exhausted. While the lamp is being used the pressure of gas is dependent upon the supply of water to the carbid. That is to say, when the pressure of gas in the carbid holder is equal to the pressure of the column of water, the supply of water naturally ceases; when the pressure of such gas is higher than the column of water, the gas escapes through the latter; and when the pressure of

gas is lower than that of the column of water, the supply of water takes place to the carbide holder in inverse proportion to the pressure. Every gas burner requires a certain minimum pressure for the complete development of its flame. This minimum pressure corresponds in my lamp to the pressure of the column of water in the water supply pipe, G."

There is no room for doubt, therefore, that Schmitt knew and explained that the operation of his lamp was automatic, and did not depend upon the manual manipulation of the valve *a*.

106 The Court: I don't get that. Where does it say it can be moved up and down?

The Witness: That little rod is moved up and down.

The Court: How?

The Witness: By manipulating the little button *c-1* on the top.

The Court Yes.

The Witness: And furthermore if the gas pressure gets excessive it forms a vent through which the water can actually be ejected if necessary. It is a sort of safety valve. It acts as a little weight and has a sort of little valve seat at the top here so that if the pressure should get too great and the burner would not take care of it, it would actually force the water up.

The Court: I may not have caught this thing, but why doesn't the Schmitt patent indicate the manual manipulation of the valve? That is what I can't get at.

The Witness: It does. The valve is operated manually to shut off the water when you are through using the lamp.

The Court: What does it mean here by what I asked you before? "By means of which it can be moved up and down from outside the lamp in order to clean the outlet?"

The Witness: That is not the valve, your Honor, but the rod.

The Court: I understand, but now you are——

The Witness. Yes, the entire column.

The Court: Supposing that outlet gets clogged up. Then what do you do?

The Witness: You reciprocate the rod up and down or you rotate it.

Mr. Offield: Here is a cross section of that sort of lamp.
107 We won't go into the authenticity and so forth of that lamp now, but I think we will agree for the purpose of the Court that that lamp shows the general construction of the Schmitt lamp.

The Witness: I am afraid I have not made it plain in my previous answer, the construction of the Schmitt lamp as regards the spindle *a*. This is a valve which co-operates with the combined valve seat and water duct, marked F. It is threaded near its upper end to work in a nut, which is not lettered, but which is seated upon the roof of the water receptacle. The spindle, *a*, has a handle by which the spindle may be rotated in the nut and by thus rotating the spindle it may be raised and lowered to bring the valve into and away from the valve seat and water duct F. This is independent from the wire or rod, *b*, which has a ball or button, *c*, at the upper end by which it may be either rotated, or practically reciprocated; in other words

there are two independent parts, one of which constitutes a manually operated valve mechanism, while the other is a rod which restricts the water duct and is movable both vertically and rotatably to stir, and break up the flaked carbid around the mouth of the water tube, assuming always that a straight rod can constitute a stirrer. Is that plain, your Honor?

The Court: Yes, I understand now. Does that finish your answer?

The Witness: Yes, sir.

The Court: Then we will suspend until tomorrow morning.

Adjourned at 4:30 P. M. until Wednesday, January 6th, 1915, at 10:30 A. M.

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Trial Resumed.

NEW YORK, Wednesday, January 6, 1915—11:30 A. M.

HOWARD M. COX, resumes the stand.

Direct-examination continued by Mr. Offield:

Q. 9. Have you examined and do you understand the structure and operation of the defendants' lamp introduced in evidence in this case?

A. I have and I do.

Q. 10. Please state what factors enter into the regulation and control of the water in the defendants' lamp?

A. To save time, I made a list of those and will refer to the list.

The first element of control is the valve which is formed at the lower end of the tube which has a thread which works in the roof of the water container. This must be differentiated and kept distinct from the water tube which descends from the floor of the water chamber into the carbid container. The valve by being rotated, seats and rises from a valve seat located at the floor of the water container.

The second thing which contributes to the flow of water is the back pressure generated in the carbid container as the gas is formed.

The third element is the drawing effect of the carbid in the container. It will be understood that the carbid has an affinity for water and tends to draw the water down through the tube.

The fourth element is the restriction of the orifice by the rod which extends down through the water tube.

The fifth element is the obstructive characteristic of the ash or sludge which forms at the bottom of the water tube and this tends to hold back the down flow of water.

The sixth element is, the rod which I have just mentioned serves to clean the orifice when it is obstructed and of course helps to keep the flow going.

The seventh element is the weight of the water column or hydraulic head. Just how much effect this has, I do not know and in my opinion it is a moot question, but it apparently has an effect.

The eighth element which contributes to affect the flow at least, is the vibration to which lamps of this general character are sub-

jected in general use. Those are all of the factors entering into the water control that I have in mind at present.

Q. 11. Please state whether or not all of the factors which enter into the water control in defendants' construction are also found in the lamp of the Schmitt-British Patent?

A. These elements are all found in the Schmitt-British Patent, and the operation and the co-operation in the British Patent is exactly the same as I have just described.

Referring particularly to the drawings of the British Patent, the valve is formed at the lower end of the hollow stem *a*. This co-operates with the valve seat which is formed at the upper end of the water F. This valve may be raised by rotating the handle which appears just above the top of the water container. As to back pressure of gas, the action is obvious. Gas generated in the carbid container has but two possible outlets, one through the burner and the other through the inlet, and the pressure of gas generated in
110 the carbid container of course tends to restrict the flow into the carbid container.

As to the third factor, to wit, the absorptive power of the carbid, this is present in the Schmitt lamp, for the water tube outlet is in the carbid container and is about mid-high of the container.

As to the fourth factor, to wit, the restriction of the orifice by the central rod, the operation in the Schmitt-British Patent lamp is obvious and was explained yesterday. The parts assembled as they are must operate in this way and while the British Patent does not enlarge on this in words, the publication which was contained in the German Technical Journal, and was evidently made by Mr. Schmitt, actually describes the restricting or retarding action of the water and the rod in the water pipe.

As to the fifth factor, to wit, the stoppage of flow by the carbid, it is evidence that as soon as the mouth of the water tube becomes imbedded in the carbid, whether this happens at the very beginning or soon thereafter, the obstructive effect of the carbid will be present.

As to the sixth factor, the effect of the rod in cleaning the orifice through the water tube. This is described by Schmitt in his patent and was one of the things he had in mind especially described. The water head is the next factor and that is naturally present, the water having a free duct from the water compartment to the carbid chamber.

As to the vibration, the Schmitt patent shows the device in the form of a bicycle lamp which has a great deal of vibration, possibly more than any miners' lamp. At any rate, the lamp in use is certainly vibrated. I find, therefore, that all the factors enter-
111 ing into the operation of the defendants' lamp are found in the Schmitt-British Patent.

Q. 12. I hand you a certified copy of the file history of the original patent No. 821,580 and will ask you to state the elements in cancelled claim 1 of the original patent?

Mr. Rice: I object to the question.

(Discussion between Court and Counsel.)

The Court: Suppose you first offer your File Wrapper in evidence.

Mr. Offield: I withdraw the question.

By the Court:

Q. 13. Refer to the File Wrapper you have before you, also the defendants' lamp, and point out what elements in Claims 1 and 6 in the File Wrapper are found in Defendants' lamp?

A. The original and cancelled Claim 1 defines a structure having a water reservoir, a receptacle for calcium carbide, a water duct or tube extending from the former into the latter and a wire in said duct to tube restricting the same to permit only a predetermined quantity and rate of flow of water in the carbide, as set forth.

This is a claim of four elements, the water chamber, the carbide container, the water tube and the restricting wire. It is recited that the rod restricts the tube to permit only a predetermined quantity and rate of flow.

Q. 14. Now, take Claim 6 and make the comparison.

A. Defendants' lamp has these four elements of the claim, and these co-operate with each other and function in the manner called for by original cancelled Claim 1.

Referring to cancelled Claim 6, it reads:

112 "In a lamp of the kind described, the combination with water reservoir and receptacle for calcium carbide, of a tube extending from the former to the latter, so as to imbed in the mass of carbide contained in the receptacle, the rod extending from a point outside the lamp, through the tube to the carbide receptacle, restricting the tube to permit only a pre-determined quantity and rate of flow of water into the carbide, and a valve to cut off the supply of water to the receptacle, as set forth."

It will be seen that this clause brings into the combination in addition of the elements of Claim 1, the valve to cut off the supply of water to the receptacle. It also states that the tube extends into the carbide contained so as to be imbedded in the mass of carbide. The defendants' structure has all of these elements operating in exactly the same way as called for in original cancelled Claim 6.

Q. 15. Please state whether or not Claims 1 and 6 cancelled from the original specification were both rejected upon the Baldwin prior patent 656,874 as showing the same combination of elements?

A. These claims were rejected on Baldwin No. 656,874, also Peck No. 622,015 and the Schmitt-British Patent No. 15,688. In the original rejection another patent was cited by the examiner but the applicants were back of it.

Mr. Offield: That concludes my direct examination of this witness and I would like to ask the Court if it will be proper to introduce the book of patents as one exhibit instead of marking each individual patent.

113 The Court: It is all right as far as I am concerned.

Mr. Offield: Defendants' counsel offers in evidence all of the

prior art patents referred to by the witness Cox, and asks that they be marked collectively Defendants' Exhibit A.

(Marked Defendants' Exhibit A.)

The half section last referred to by the witness and representing defendants' construction is offered in evidence.

(Marked Defendants' Exhibit B.)

The German publication entitled Dingler's publication is offered in evidence.

(Marked Defendants' Exhibit C.)

The File Wrapper of the Baldwin patent 21,580, is offered in evidence and marked Exhibit D.

(Marked Defendants' Exhibit D.)

The File Wrapper of the re-issue patent to Baldwin is offered in evidence.

(Marked Defendants' Exhibit E.)

Cross-examination by Mr. Rice:

X Q. 16. In your opinion Mr. Cox, is it possible to have a wire rod passing through the water tube of the carbid lamp and have that rod so small in diameter with respect to the bore of the tube that it will not restrict and control the water flow?

A. Yes, sir, it will be possible. A hat pin in a water main would not affect it, whether that would be possible in a lamp, I can conceive it will be possible, yes.

X Q. 17. Now, referring to the Handshy Patent, I understand it to be your position that the rod G¹ is the water controlling and restricting rod—am I correct?

A. Yes, sir.

X Q. 18. So that as you understand the construction of that lamp, the flow of water from the water receptacle into the carbid is controlled and restricted by the rod G¹?

A. Yes, sir, but not solely.

X Q. 19. Not solely?

A. The valve has a function there and I think the function in the manner described.

X Q. 20. Then it is your position that the water flow in the Handshy construction is restricted and controlled by the rod and the valve?

A. And the back pressure and the carbid in the bottom of the lamp and the rest of the elements that I mentioned in the list which I gave earlier in my testimony as affecting the flow of water in a lamp of this character.

X Q. 21. Well, admitting the action of the other elements but omitting them from consideration at this point, a certain definite flow of water occurs in the Handshy lamp from the reservoir down through the tube and this flow is controlled by the valve and the rod—that I understand is your position?

A. Yes, sir, they both contribute and function it.

X Q. 22. Is the rod in your opinion, necessary to the action of the Handshy construction, that is to say, will the valve control the flow if the rod is not present?

A. Not nearly so well, the flow of water in the tube was well described by Mr. Proctor and it is much easier to control the flow if you employ a large water tube and have a rod in the tube, you get a much greater frictional surface on the inside of the tube and you
115 get the additional frictional surface of the exterior of the rod and the action of the valve would be much more sensitive.

X Q. 23. Do you find in the specification of the Handsby Patent any statement that the rod restricts and controls the water flow in that construction?

A. I do not find any description in the Handsby Patent or explanation of such function. it is simply showing the construction of the device.

X Q. 24. It is your position then, that the rod is essential to the operation of the Handsby lamp, is that correct?

A. I would not regard it as essential to the successful operation of that lamp, but it would certainly be much more precarious and uncertain in its operation if it were not present.

X Q. 25. Now referring to the publication from Dingler's journal, I understand it to be your position that the lamp shown in this publication is the commercial form if you like, of the lamp disclosed in the Schmitt-British Patent—is that correct?

A. The publication is somewhat earlier in date than the patent, and whether it was later changed or not, I do not know. In fact, it is an assumption that it is the same Schmitt, but as a mere matter of assumption I suppose that was a commercial form that he used at the time that he had it described.

X Q. 26. I note in your testimony, if I understand it, that you were referring to the publication to help out the patent and the patent to help out the publication. I therefore assume that it is your position that these lamps are identical?

A. I referred to the publication to show that Schmitt knew
116 and described in words the fact that the rod would restrict and control the flow in the tube. That was all I think I intended.

X Q. 27. And you therefore interpreted the patent as showing a restricting rod although the patent does not in terms describe that construction?

A. Yes, sir.

X Q. 28. Now, referring to this Dingler publication, what is the part marked *k*?

A. That is a center straining tube, so described in the translation attached to the publication.

X Q. 29. In this Dingler article, it states, does it not, that in filling the lamp, "Care should be taken during the filling operation not to let any carbid fall into the center straining tube"?

A. Yes, sir, you are quoting from the translation.

X Q. 30. And when the lamp shown in this Dingler article is assembled, the water feeding tube, and the needle passing through it descends into this central straining tube, does it not?

A. That appears to be the construction.

X Q. 31. So that they are located so that the water feed tube and the needle are when the lamp is assembled located in this center straining tube?

A. That is correct.

X Q. 32. Referring to the Gaston Patent, what is the authority for the statement that the tube 37 is open at the bottom?

A. I do not know that I have any authority in the specification, but the drawing, it is plain, and it normally shows the tube which terminates at that point and I assumed that to be the construction. I think it is rather well warranted.

X Q. 33. Pure assumption?

A. Pure assumption, but from reading the drawings one would be pretty well warranted in that assumption. However, there are apertures along the side.

X Q. 34. Then it would be quite possible for the water to
117 escape, not from the bottom there, but from the apertures along the side?

A. Yes, sir, it is an assumption.

By the Court:

X Q. 35. Let me ask you this—as a matter of draughtmanship, is there anything at the end of that tube from the draughtsman's standpoint that would indicate the opening?

A. There is, because in the first place if you had nothing to close it, you would have a line showing the disc which would close it. The draughtsman would have to show a second line below in order to show a disc closing the end, unless he had a gasket which was fitted up inside, and I think it would take an expert watchmaker to do that in such a small construction. I hardly think that Mr. Rice will say that he believe- there is anything to stop it at the bottom. If there is anything to stop the bottom, it would have to be in the shape of a ring which was fitted up around the tube and I think it would be quite unlikely that any such construction would be there.

By Mr. Rice:

X Q. 36. Now if this drawing were mechanically exact, the lines would be carried down, would they not, by showing the inside as well as the outside of the diameter of that tube. In other words, below the broken part, you have nothing which indicates that that tube is not solid, so far as the drawing is concerned?

A. Indicated above—

X Q. 37. Never mind above; I am talking about below—what I want to know is, if this drawing is to be construed as absolutely correct, then you should have two lines down the outside here (indicating) to show that as a matter of fact that was the tube?

118 A. I made a good many patent drawings and I have in my early days made them, and I always thought that to put too many dotted lines confused. My assumption is not a particular drawing, there is nothing to indicate that it is closed and the actual normal successful way to make it would be to make it open and it would be to my mind a violent assumption that there was nothing in there. I am not saying that it is open, except that it would naturally be open.

X Q. 38. If it were open, what would be the use of the perforation from the bottom?

A. To get better distribution, you would have more points of contact with the water and the carbid.

X Q. 39. Which proposition assumes, does it not, that the tube would be full of water to get your better distribution?

A. I assume the tube is full of water from the operation. This describes a water tube.

X Q. 40. The file wrapper to which you have just referred shows does it not, that the Schmitt Patent, concerning which you have testified was cited by the Patent Office against the Baldwin original application which matured into Patent No. 821,520, and it appears that the patent was allowed?

A. Yes, sir.

Re-direct-examination by Mr. Offield:

Re-D. Q. 41. Please state whether or not you found any statement in the re-issue Baldwin Patent to the effect that the size of the wire used in the restricted tube may be varied?

A. Commencing with line 31, page 2, of the re-issue patent, the patentee says, "This retarding friction may be regulated by varying the size of wire used."

119 AUGIE L. HANSEN, called as a witness on behalf of the defendants, after being duly sworn, testifies as follows:

Direct examination by Mr. Offield:

Q. 1. Please state your name, residence and occupation?

A. Factory manager of the Justrite Manufacturing Company, 35 years old, residence Evanston, Illinois.

Q. 2. How long have you been connected with the Justrite Manufacturing Company?

A. Five years, since we started in the manufacturing business.

Q. 3. When did the Justrite Manufacturing Company first sell a lamp of the kind as offered in evidence in this case, as illustrating defendants' lamp?

A. In July, 1911.

Q. 4. To whom was the first sale of your acetylene lamp for miner's use made?

A. Funk Brothers, Chicago Heights, Illinois.

Mr. Offield: Will you admit that that sale was made July 22nd, 1911.

Mr. Rice: The fact is not controverted.

Q. 5. I show you a cross sectional model of an acetylene lamp and will ask you to state who made the model, and what care and procedure was taken in the manufacture of the same and also if it was taken from any particular design of previous lamp?

Mr. Rice: I would like to know the purpose of the question, if your Honor please.

Mr. Offield: My only purpose is, Mr. Hansen took the Schmitt

patent and followed it up as closely as he could and made this lamp from the Schmitt drawing.

120 The Court: For illustration in this suit?

Mr. Offield: For illustration in this suit. Now, if your Honor is satisfied with the operation and construction and the details of that Schmitt lamp, there is no use of going into this feature.

By the Court:

Q. 6. I think if this is a correct model it will be helpful.

A. This lamp was built and constructed very minutely from the patent drawing of the Schmitt lamp, and was turned over to one of the best men we have in our factory, under my instruction, and every part of it has been measured up very carefully and the details of it taken up at the same time the other lamps that were made to operate, to see that everything was perfect. The same as the working drawing from the Schmitt patent.

The Court: Is there any particular in which that model which you have in your hand is different from the drawing in the Schmitt patent?

Mr. Offield: I will tell the Court this. The only controversy I presume that will be made about this lamp is that the size of the rod in that model will be alleged to be larger than the size of the rod in the Schmitt structure. That is the only controversy.

The Witness: There is absolutely only one difference and that is that the draftsman in making this drawing, in the Schmitt patent, had drawn a straight line through the sectional part of the tube in order to avoid conflict. By drawing the straight line showing

121 a very thin wire, whereas it would not be practical to have a wire that thin for fear that in riding a bicycle that wire would be thrown right out. So it was necessary to have enough friction there to hold it in and you will further notice that the imbedded tube is shown in the same position as the one in the drawing which is practically imbedded in the carbide.

Q. 7. Please state whether or not the wire as shown in the Schmitt patent would stay up in the tube as illustrated in the Schmitt patent if the wire were as thin as that shown in the drawing?

A. No, the drawing shows that the ball of the valve is $\frac{3}{18}$ of an inch above, it is suspended in the air, and there is no friction shown there to show the suspension, so the thinness of that wire would not be practical.

Mr. Offield: I offer the one-half section of the Schmitt lamp in evidence.

Mr. Rice: I object to the title on the ground that it is misleading.

Mr. Offield: Well, I will put it in as Hansen model of Schmitt lamp.

Mr. Rice: No objection to that.

(Marked Exhibit F.)

Q. 8. Please state whether or not the acetylene lamp offered in evidence in this case as of the defendants' manufacture, and identified

as Complainants' Exhibit 2, has a valve mounted upon it which is capable of regulating and controlling the flow of water, and until it is so regulated and controlled the flow of the water to the carbide, and in answering the question, you must illustrate to the Court the fact that the flow may be regulated by raising or lowering the valve?

A. Yes, sir, it can shut off and regulate the water flow by turning the valve on the upper part of the water tank. It is also done the same in the Schmitt construction (Witness illustrates).

Now, in operation it will shut off the valve tight and it would open it up about a quarter of a turn and that would give about a three-quarter inch flame. And when the carbide is exhausted, you give it another quarter of a turn.

Q. 9. Now, open that up to show that there is a fast flow through the tube?

A. (Witness indicates.) Then it can be shut off entirely (Witness indicates).

Q. 10. Please state how the cleaning rod in the defendants' lamp is operated by the miners and is intended to be operated.

A. In all my experience in going to the mines they are always operated as a pump. The miner reaches up and pumps it in place after turning it. (Witness indicates.)

Q. 11. Please state if the lamps manufactured by the Justrite Manufacturing Company have always been primarily valve control lamps?

A. They have always been, we have never made them any other way.

Q. 12 Please state whether or not at the time the Justrite Manufacturing Company placed their lamps upon the market, if Frederic E. Baldwin, the complainant in this case, or his licensee, the John Simpons Company, had a lamp upon the market adapted for use by miners for cap wear and similar as to general size as your lamp, which had a valve control?

123 Mr. Rice: Object to the question. I do not think the witness has been qualified as yet to say what was on the market.

The Witness: Not to my knowledge.

The Court: That is, July 1911?

Mr. Offield: Yes, sir.

By the Court:

Q. 13. Where had you been, had you been at the mines?

A. We conceived the idea of making a miner's lamp the latter part of 1910 and during the time from the latter part of 1910 until the time we made and delivered lamps, we had made a very full study of it, went to the mines in all parts of the country and seen what the requirements of the miners were, and from that we constructed our lamps.

Q. 14. Did you see any of the Baldwin lamps?

A. We had not seen any Baldwin lamps until I had already re-

ceived orders from some of our customers on the lamps that we were now making.

Q. 15. When did you first see a Baldwin lamp?

A. I have a letter there——

Q. 16. I mean you yourself?

A. I think it was the first part of 1911, one of our customers sent me one. The letter says, 9th of January 1911. Some customer wrote me and sent me a sample of the lamp.

Q. 17. What was the appearance of that lamp?

A. That was the same as the Baldwin lamp, practically the same.

Q. 18. That is now in suit?

A. Yes, sir.

Q. 19. But whether there were any other Baldwin lamps around, I suppose you do not know?

A. Well, I had not seen any up to that time until afterwards I saw numerous lots of them.

Recess until 2:10 P. M.

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After Recess, at 2:20 P. M.

A. L. HANSEN, resumes the stand.

Direct examination by Mr. Offield (continued):

Q. 20. Prior to the date that you first began to design an acetylene lamp for your company had you had any previous experience in the designing, or constructing of either gasoline or acetylene generating apparatus?

A. Yes, I have had a great deal of experience in running of the factories, and in the manufacture and design of acetylene generators, and gasoline lighting systems of all descriptions. I have taken several patents of that kind.

Q. 21. Please state with what company you were connected that was engaged in this line of work?

A. The Acorn Brass Manufacturing of Chicago and George W. Deener of Chicago.

Q. 22. How did your company happen to go into the manufacture of acetylene miner's lamps?

A. Why, in the year of 1910 a hardware jobber in Chicago wrote in a letter to us as to whether we would be in a position to manufacture a certain lamp and I wrote back to him that we were in position to manufacture anything in the sheet metal line, so we asked him to submit us a sample of some description, or a sketch of anything that he may have. He sent me a sample lamp, which was known as the Black Diamond Lamp at that time and asked me to quote him prices in ten thousand lots and we had gone along for a long time trying to negotiate a deal with him and finally, for credit reasons, we passed him up, and from what he had told me I had gathered that there was an open field for a good acetylene lamp in the mine business.

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Q. 23. Now, at the time that you began your work upon a miner's acetylene lamp in 1910, how many acetylene lamps

for miners' uses of the character involved in this suit were upon the market?

A. Why, nine or ten, as near as I can recollect the names of them.

Q. 24. Please give us the names of those to the best of your recollection which were on the market in 1910 or 1911?

A. There was the Baldwin lamp, the Victor lamp, Bright Light, Maple City, Pathfinder, Simplex, Blesser and Scranton. These are just from recollection.

Q. 25. About how many lamps are on the market to-day of this same type, that is a miner's lamp of different makes?

A. About twenty of them as near as I can recollect them.

Q. 26. Please name those that are on the market at this time that were not being made in 1910 or 1911?

A. The Czar lamp, Grier Brothers, Guy Dropper, Autolight, Eveready, Stein, Springfield, and a lamp made in Oshkosh, I don't recollect the names, and another lamp made in Danville, the name of which I do not recall and the Duplex made in Pittsburgh, and the mine worker's lamp made in Iowa.

Q. 27. What lamps had you seen prior to the time that you first saw a Baldwin lamp, that is, a miner's lamp?

A. I had seen that Bright Light and Scranton lamp and the Pathfinder, I believe. They are made in Pennsylvania down here, and of course I have seen any amount of bicycle lamps and I have had a great deal to do with bicycle lamps.

Q. 28. And do you wish the Court to understand that the lamp offered here in evidence was designed by you before you ever
126 saw a Baldwin lamp?

A. I do. The design of it you can very readily see that up to this time there is no manufacturer who made a lamp of that design.

Q. 29. That may be perfectly true, but my question pertained more to the interior construction of the light. Did you design the interior construction of the defendants' lamp offered in evidence here before you ever saw a Baldwin lamp of this character?

A. I did, yes, long before.

Q. 30. Are oil lamps used to any extent in the coal mines of this country to-day?

A. Why, they are in certain districts, about fifty per cent. In the anthracite region we have a great many oil lamps and in other states seventy-five or eighty per cent of acetylene lights and in others again they are entirely acetylene lights. Different districts, taking it all the way through, I presume the acetylene, according to the Union Carbide Report would be about seventy-five per cent of acetylene lamps.

Q. 31. Are you of an inventive turn of mind, that is, have you had experience in devising and making various forms of different mechanical structures?

A. That has been my position at every factory that I have ever had charge of, getting up and designing and manufacturing new articles.

Q. 32. Without reference to the number of different articles that

you have designed where no patents have been taken out, can you state generally as to the number of inventions which you have made where patents have been applied for upon them?

Mr. Rice: I object, if your Honor please, as irrelevant.

127 The Court: Overruled. What is it on, simply on a question of credibility?

Mr. Offield: Not so much credibility, your Honor. I simply wanted to show by this witness that he is a designer, that he is a man that has taken out a very great many patents, and that he has been in the mechanical field to offset any inference that might be drawn that he saw a Baldwin lamp and reproduced a structure somewhat similar to it. I do not want the Court to have that idea. **He is an originator.**

The Court: This question is immaterial. He has already said that he has been employed in factories for the purpose of getting up new constructions and states under oath that he did not see a Baldwin lamp.

Mr. Offield: I will withdraw the question.

The Court: Unless that is contradicted, the fact, for whatever it may be worth, is accepted.

Mr. Offield: I will withdraw the question as to the number of patents he has taken out.

By the Court:

Q. 33. Did you, before your design of defendants' lamp, examine any patents in the prior art?

A. No, we didn't until we got into the business, then when we saw there were other manufacturers—at first we had only seen two or three lamps. Afterwards we found there were eight or nine lamps on the market and we started to investigate and then we found that the Baldwin patent, that is the first we had seen of the Baldwin patent, and I told one of our customers and he purchased one

128 of the lamps for me in order to get it. That was the first we had known of the Baldwin lamp, by making a patent search.

Q. 34. Well, what had you before you when you made the lamp in question in the way of information either from physically seeing lights, or lamps, I should say, or from documents of any kind? Now, you have given us a list of the things that you had before you, now what else had you before you?

A. Why, we made some table lamps, acetylene lamps and we made acetylene generators for house lighting and having had a great deal of experience with bicycle lamps of all descriptions that were being made at Kenosha, up near Chicago there, so I was very much familiar with the working of acetylene.

Q. 35. You mentioned seeing one or two patents. Do you remember which they were?

A. I saw all the patents after we made a search.

Q. 36. I am talking now, as I understand you, you actually designed a lamp similar in all respects to the present commercial lamp of the defendants?

A. It is the same lamp.

Q. 37. The same lamp, before you saw a Baldwin lamp?

A. Yes, sir.

Q. 38. Now, you have said, if I understood you correctly, that before you made that design you had seen perhaps two patents?

A. No, two or three lamps, your Honor.

Q. 39. Oh, two or three lamps?

A. Yes.

Q. 40. So, as I understand you, before you made the design you hadn't seen any patents at all?

A. No, then after I had seen that there were six or eight other miners' lamps on the market, then I had a patent search made to see if there were any patents.

129 Q. 41. Now, since July, 1911, have you marketed these goods right along?

A. Yes, sir, we have been in the market every day.

Mr. Offield: Just one or two more questions, your Honor, and I will be through with the witness.

By Mr. Offield:

Q. 42. Does the Baldwin lamp as manufactured to-day, and manufactured for sometime past, embody in a part of its construction a certain piece of mechanism that is covered by letters patent and manufactured by the John Simmons Company under license from your company?

A. There is.

Mr. Rice: I object, if your Honor please, that is entirely irrelevant.

Mr. Offield: The testimony is relevant in this respect——

Mr. Rice: If they want to go into that——

Mr. Offield: There is just one feature of this lamp makes it a practical commercial lamp for outdoor use without a glass reflector. The reflecting apparatus upon the front with the horizontally projected flame is covered by the Buffington Patent. The Buffington Patent is owned by the Justrite Company and the John Simmons Company are operating under a license from the Justrite Company.

The Court: What difference does it make?

Mr. Rice: That is the reason I don't think it ought to be in the case. You heard Mr. Offield's statement of it. Now, if I were going to state the facts under which that license was given and
130 taken I should state them entirely differently and if it is material at all it may be necessary to put in a lot of testimony here to show what was done about that Buffington license and why it was taken and all that sort of thing, and taken as against my advice because the patent was invalid, to stop a row.

The Court: I don't see how it is involved in the issues here.

Mr. Offield: Simply to show that that adds a very material feature to it. I will withdraw the question, however. My direct-examination is closed.

By the Court:

Q. 43. Now, when was your company organized, Mr. Hansen?

A. In the middle part of 1910 we started in the manufacturing business of automatic machinery and patent devices.

Q. 44. You were in a general manufacturing business of that kind?

A. We were; we were soliciting work from other manufacturers.

Q. 45. Now, since then have you manufactured other goods besides these lamps?

A. Oh, yes, other patented articles of all descriptions.

Q. 46. Then these lamps simply represent one line, is that the idea?

A. That is all. I may state that I have a great many patents on fire protecting devices?

Q. 47. You have answered what I wanted to get at.

Cross-examination by Mr. Rice:

X Q. 48. You were present at the trial of the Grier case in Pittsburgh, were you not?

A. I was a part of the time, not the entire trial.

131 X Q. 49. And you were there when a model similar to this model was introduced, were you not?

A. Yes.

The Court: What number?

Mr. Rice: This is Exhibit F, Hansen model of the Schmitt lamp.

X Q. 50. And you furnished that model to Grier Brothers, did you not?

A. I let them borrow it, yes.

X Q. 51. In other words, the model in evidence purporting to represent the Schmitt lamp in the Pittsburgh suit was supplied by you?

A. Yes, that is right.

X Q. 52. Was it made by the same workmen who made this?

A. That is the same lamp.

X Q. 53. This can't be the same lamp because that lamp is in the Court of Appeals, that lamp is before the Court of Appeals in Philadelphia?

A. They didn't have a sectional lamp then, Mr. Rice, they had that solid lamp. We sold them a solid lamp.

X Q. 54. Then the situation is that you made another lamp like this and you sold it to Grier Brothers Company?

A. Yes, that is right.

X Q. 55. And that lamp was put in evidence before Judge Orr while you were present there?

A. That is right.

X Q. 56. And that lamp had the same interior construction as this lamp has, did it?

A. The same thing, they were made at the same time.

X Q. 57. And by the same workmen?

A. The same workmen.

X Q. 58. I call your attention to a certain sheet that I have here, called "Directions for Operating Justrite Acetylene Lamp."
132 This is the direction sheet, is it not, which you sent out with your lamp of the type here in evidence?

A. Yes, that is right.

Mr. Rice: I offer this direction sheet in evidence, if your Honor please, as Complainants' Exhibit No. 13, "Justrite Direction Sheet."
(Marked Complainants' Exhibit No. 13.)

X Q. 59. Now, if I understood you correctly, you say that before you designed your mine lamp you visited a large number of mines to see what sort of lamps they were using; is that right?

A. That is right, yes, sir.

X Q. 60. What mines did you visit?

A. The mines down in through Danville district in our own State there, right near by. We have a great many mines there.

X Q. 61. And in none of these Danville mines did you find any Baldwin lamps in use?

A. Well, Mr. Rice, I didn't say that I visited the mines until I had already had the lamp designed.

X Q. 62. Oh.

A. You won't find that in my testimony.

X Q. 63. You designed your lamp first and then visited the various mines afterwards?

A. That is what I stated in my testimony.

Q. 64. I didn't so understand?

A. Yes.

X Q. 65. Now, was this lamp which is in evidence here, Complainants' Exhibit No. 2, Defendants' lamp, is this the first lamp designed?

A. No, there was one that was designed—we made a very few of them before that one. We have it in our case there.

133 X Q. 66. So this is not the first lamp?

A. There were very few made. These were some of the first ones sold.

X Q. 67. Was this one of the first lamps you designed? Was this the first lamp you designed?

A. I would have to see it, Mr. Rice.

(Mr. Rice hands lamp to witness.)

The Witness: This is the first lamp.

X Q. 68. This is the first lamp you designed?

A. Yes.

Mr. Rice: I call your Honor's attention that this is the first lamp designed, so he says. You will notice how the stem is handled there.

The Witness: There is the wire running right through it, you see; that comes right down.

Mr. Rice: It is also flush.

The Witness: No, it is not flush, it goes through.

Mr. Rice: I will offer this in evidence, if your Honor please, as Complainants' Exhibit 14, the first Justrite lamp.

(Marked Complainants' Exhibit 14.)

X Q. 69. Did any of these lamps of which you have given a list, have the internal construction of the Baldwin lamp, so far as you recall?

A. Why, yes, the ones, some of those first ones had a wire but the wire was threaded and in place of poking it up and down it was threaded all the way down. The Bright Light, for instance, the wire is threaded that way. They all had a wire.

X Q. 70. All had the wire choking the tube and in all 134 of them the end of the tube was imbedded in the carbid?

A. I won't say they were all imbedded in the carbid. There were some that had—I think the Bright Light had some kind of a contrivance on the outside of the tube.

X Q. 71. Did you hear the testimony of Mr. Shean in Pittsburgh regarding that Bright Light lamp?

A. I know he was there, but I don't know as I did.

X Q. 72. Don't you remember that Mr. Shean said that they did furnish—

Mr. Offield: I object to this line of testimony, your Honor.

The Court: Let the question be asked.

X Q. 73. Do you remember that Mr. Shean said that they did furnish this foraminous screen with the Bright Light lamp, but that this screen was thrown away by the miners?

A. I don't recollect that he ever said that, Mr. Rice, but I know that they had a foraminous screen on there. I don't know whether he ever said that. I was not interested enough in that Grier case to note the details of it.

X Q. 74. Regarding this Bright Light lamp, you say that it had a foraminous screen that surrounded the end of the water tube?

A. It had something very loose there that would fall out every time the man took the lamp out.

X Q. 75. But all that was necessary to do to convert the Bright Light into a Baldwin, as a practical proposition, so far as the water feed was concerned, was to throw away the loose screen which fell out every time the miners opened the lamp, isn't that right.

A. No, not according to my interpretation of Baldwin patent.

135 X Q. 76. Never mind your interpretation of Baldwin patent; I am talking about the Baldwin lamp?

A. I say that the rod is threaded.

X Q. 77. And it also extends below the end of the tube, doesn't it?

A. It screws right down into it.

X Q. 78. Does it extend below the end of the tube at all?

A. Just the very point of it.

X Q. 79. Just the point of it?

A. Just the point of it, the lamps that I seen.

X Q. 80. It didn't extend so much below them as the Justrite?

A. Well, that is the difference, that is not the same construction.

X Q. 81. The point of the rod is the same, isn't it?

A. No, it has just a needle point on the Bright Light. There were others there, Mr. Rice; that was not the only one.

Mr. Rice: That is all.

Mr. Offield: That is all for the defendants. The defendants rest.

The Court: Mr. Offield, will you make a list for me of the patents which you have introduced here which were not before Judge Orr?

Mr. Offield: Yes, sir, I will, your Honor.

Mr. Rice: I think I can give that.

The Court: If you will just tell me them now before Mr. Proctor starts in.

Mr. Rice: I think I have those marked in my list here. The only patents which were before Judge Orr were the Lee patent, 619,046; the Hendsy patent, 591,132; the Peck patent, 622,015; the Schmitt-British patent, 15,688; the Gaston patent, 668,288; the Hallows and Tucker patent, 644,910; the Barrett-British patent, 2699; and the Williams patent, 619,814.

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Complainants' Rebuttal Proofs.

ALFRED PROCTOR, recalled, testifies as follows:

Direct examination by Mr. Rice:

Q. 82. Referring to Defendants' Exhibit F, Hansen model of Schmitt lamp, have you measured this model so that you can state how it compares in dimensions with the illustrations of the Schmitt-British patent?

A. Yes, I have measured the model and I find that in some respects it differs materially from being an exact representation of what the patent shows. For instance, this carbid container is about one-eighth of an inch shallower than the carbid container here in the patent and the water tube outlet projects about one-eighth of an inch, or three-sixteenths of an inch more than is shown in the patent, and accordingly the outlet is brought the sum of those amounts nearer the bottom. It is brought that much further toward a position where it might seem to sometimes be imbedded in the carbid, although I call attention to the fact that even under those conditions it does not project very far. I also call attention to the fact that the wire which has been selected here, and also the bore of the outlet duct are sizes chosen practically exactly from the Complainants' commercial lamp. If the drawing was scaled, it would be found that the bore in this model was twice as great as in the patent and the size of the wire about five times as great as shown in the patent. In other respects, that is, as to the reflector and reservoir, and those matters, the model seems to be substantially in accordance with the drawing of the British patent.

Q. 83. Referring to the Dingler publication can you produce an actual lamp which corresponds substantially with the lamp shown in that Dingler publication, and if so, please do so?

A. Here is a lamp which corresponds substantially with what is disclosed in the Dingler publication.

Q. 84. Will you please state where you got this lamp?

A. That is a lamp which happened to be in my possession some years ago before I had any connection with this suit. I have

one or two or three acetylene lamps of my own and a certain gentleman, quite an old man who has given up bicycle riding, by the name of Mr. Scripture, gave me his bicycle appurtenances, including that lamp, and possibly one or two others, and I kept it with some other things I had.

Mr. Rice: I offer this lamp in evidence as Complainants' Exhibit, Lamp Schmitt type, No. 15.

The Court: That is taken subject to such examination as may be made by Mr. Offield.

Mr. Rice: If your Honor please, it is offered for simply what it is worth, like the German publication.

The Court: I will take it on that theory.

Mr. Rice: Yes.

The Court: I will take it as a lamp which Mr. Proctor said is substantially in accord with the German publication.

Mr. Rice: Exactly, nothing else.

(Marked Complainants' Exhibit 15.)

Q. 85. Now, will you please briefly describe that lamp?

Answer. This lamp corresponds quite closely with a group
138 of lamps of a certain type I have used and experimented with.

I think I have had a half a dozen or possibly four acetylene lamps for bicycles and motorcycles, all of which had substantially this principle of a water reservoir and a regulating valve and a drop feed dripping into the carbide chamber and generally through a foraminous screen as shown here. The idea of these lamps is to have a regulating valve that you can turn with greater or less precision, generally furnished with a pointer or indicator of some sort moving over marks or divisions as on this model and the practice was to find by experiment the right division and set it there and the usual result was that the fine adjustment of the valve became clogged and then you would have to let in more water by changing the adjustment and then after a few moments running it would be found that you had let in too much water and the lamp would be burning too brightly and smoking the reflector and possibly the gas escaping through the water tube so that according to my experience in the use of these lamps I never found one of them that was practically satisfactory from my standpoint. I gave up using the lamps of that type.

Q. 86. Describe the interior operation.

The Court: This lamp, as I see, has on it "Schmitt's original," hasn't it?

Mr. Rice: I was about to ask Mr. Proctor when he closed his answer whether he put that on or not.

The Witness: This lamp is just as I got it; I haven't made any change of course.

The Court: It says "Schutz mark" and under that "Schmitt's original," and some design there and that was there when
139 this gentleman gave you the lamp.

The Witness: Yes. This lamp is equipped with a regulating valve

by which the flow of water from the reservoir is controlled and the regulating valve is opened and closed by this pointer or indicator to the required amount. In that way the flow can be adjusted as I show now. I now have a drip feed of a certain amount and by opening the valve still further I increase the flow. By moving it to an intermediate point the drops are cut down somewhat, and theoretically I can get any drip feed required, subject, however, to the practical points that I have mentioned. I would also call attention to the fact that this drip feed is entirely within the gaseous atmosphere of the carbid container and is subject to the usual difficulty, which is a very serious one, in all of these lamps of the deposit of lime from gas, and that is the purpose of this fine wire which can be poked through, in other words, to dislodge those lime particles from the outlet, the lime particles being deposited from the gas. As to the carbid container I merely call attention to the fact that it is of the usual form in this type of lamps, having a foraminous screen at the center into which the water may drip.

Q. 87. In the operation of that lamp will the end of the tube through which the water is being delivered be imbedded in the carbid?

A. It will not.

Q. 88. In that lamp is the water flow restricted and controlled by that needle which extends through there?

A. No, it is not.

Q. 89. Referring to the Schmitt-British patent, will you please state whether or not you find in the disclosure of this patent a combination set forth in the 4th Claim of the Baldwin patent here in suit, the element co-operating as recited in that Claim?

A. No.

Q. 90. Will you please state your reason for your last answer?

A. The Schmitt patent particularly describes that it operates by a regulating valve, this being mentioned in the first and second lines of the Claim on page 2 where it says: "Is provided with a valve for regulating the supply of water to the carbid." It is furthermore to be noted that the outlet of the water tube is well above the carbid in the container, in fact, practically on a level with the top of the container. As to Mr. Cox's point the container might be extended in effect by the gas space above, I would merely note that the outlet for the gas is only slightly elevated, so that any expansion of the carbid in this direction would clog up the gas pipe to the burner and furthermore I will call attention to the fact that the upper part of the container is reduced to substantially half the diameter of the lower part, assuming that the upper part can be said to be any part of the container, and therefore has only a quarter of the available contents, so that the amount of space afforded by any upward expansion is practically negligible. It therefore cannot be assumed that the carbid reaches the mouth of the outlet either at the start of the operation or at any part of the operation.

I further call attention to the fact that in this Schmitt patent the water comes down from the reservoir through a separate coiled pipe

and only passes through the outlet for a distance of about
141 three-eighths of an inch at the neighborhood of the outlet

This distance is so short as to afford only a negligible amount of retarding surface. That, of course, is quite different from the amount of retarding surface which is afforded by a comparatively long tube and restricting rod. Furthermore, there is no warrant for assuming that this fine wire is a restricting rod, as referred to in the Baldwin patent. It would be perfectly easy for the draftsman to have drawn it as a slender rod just as easy as to make the representation which he has of a fine wire, and the purpose of this wire is described merely in the patent as a cleaner for removing the particles of lime from the outlet. That very statement in the patent shows in itself that it is not an imbedded tube because the imbedding would render the outlet not liable to be obstructed by the lime deposit from the gas in that way.

I might also mention that the statement in the specification with respect to the blowing off of the gas through the water reservoir when the pressure exceeds a certain amount also indicates that there is no such imbedding present as in the Baldwin, Comp-ainants' lamp, because that imbedding prevents, as I showed, such a blowing off except under extreme circumstances, or under special conditions.

Q. 91. Mr. Cox stated if I recall correctly, that the following statement from the Schmitt-British patent showed that the tube was imbedded in the carbid: "While the lamp is being used the pressure of the gas is dependent upon the supply of water to the carbid, that is to say, when the pressure of gas in the carbid holder is equal to
142 the pressure of the water column the supply of water naturally ceases: when the pressure of such gas is higher than that of the column of water the gas escapes through the latter; and when the pressure of gas is lower than the column of water the supply of water takes place to the carbid holder in inverse proportion to the pressure." Does that statement indicate to you that the lower end of the tube here could be imbedded in the carbid?

A. No.

Q. 92. Why not?

A. Because what you have read would precisely answer by an outlet which is not imbedded.

Q. 93. Would it be answered by an outlet which was imbedded?

A. No.

Q. 94. Now referring to Defendants' Exhibit C, extract from Dinglers Journal, will you please state whether or not in your opinion the lamp disclosed by this publication is the lamp defined in Claim 4 of the patent in suit?

A. No.

Q. 95. Please state why. Give the reason for your last answer?

A. Well, I have already stated that the lamp which I have produced is substantially the lamp here described.

Q. 96. Please confine your answer to this publication?

A. Yes, as to this publication. We have here simply the ordinary type of bicycle lamp with a drip feed dripping into a foraminous tube in the carbid container. The lamp has the usual

regulating valve by which the flow can be adjusted and it has a fine wire extending through the outlet to clean it of the dust particles from the gaseous atmosphere and also affording an extension, perhaps regulates the size of the drops tending to make the drops smaller so that they will drop a little oftener. There is no water tube with

the restriction rod as referred to in Claim 4, nor is there a
143 a water tube imbedded in the carbid, nor is there a stirrer.

Q. 97. Referring to this publication, is or is it not a fact that the sieve tube K would prevent any imbedding of the water tube in the carbid?

A. It would.

Q. 98. Referring to the Marechal-British patent Mr. Cox stated, if I understood him correctly, that he didn't think this patent contained the combination of elements set forth in the patent in suit. Do you agree with him?

A. Yes.

Q. 99. Do you find in this patent a tube imbedded in the carbid?

A. No.

Q. 100. This patent illustrates a drop-by-drop feed, that is to say, the water is shown as falling in drops from the end of the wire G. Would that sort of a feed be consistent with imbedding the tube in the carbid?

A. No, certainly not.

Q. 101. Why not?

A. Because if the tube is imbedded in the carbid the water will flow under the conditions that I have stated in my direct examination, that is, percolating through the sludge and not falling drop by drop.

Q. 102. That is, the feed would be necessarily a continuous feed, is that the idea?

A. Yes, sir.

Q. 103. Could this wire in the Marechal-British patent be used as a stirrer?

A. No, because neither it nor the tube is imbedded in the carbid.

Q. 104. Is there any other reason why it could not be used as a stirrer?

A. It could not have its described function in the patent if it were imbedded in the carbid.

Q. 105. Will you state if this was to be used as a stirrer how you would get hold of it?

A. It would be impossible because it is all contained within the casing.

144 Q. 106. Referring now to the Handshy patent the specification of this patent describes a certain modification in line 84 of page 1, the statement in the specification being, "This stem may be secured to the diaphragm E", the reference being to the stem C'. I hand you a sketch and will ask you if this is a correct illustration of the construction there disclosed?

A. Yes, it is.

Mr. Rice: I will offer this in evidence.

The Court: That will be Plaintiff's Exhibit 16.

Mr. Rice: Plaintiff's Exhibit 16, Proctor's Sketch, Handshy first modification.

(The sketch was received in evidence and marked Plaintiffs' Exhibit 16.)

Q. 107. Referring still to the Handshy patent, the specification discloses a further modification, that is, still referring to the stem the specification states, "It may extend upward from the bell and be secured to the top A2 of the chamber of B". I hand you a sketch and will ask you if this correctly illustrates the modification there disclosed?

A. It does.

The Court: That will be Proctor's Handshy Second Modification Plaintiffs' Exhibit 17.

(The sketch was marked Plaintiffs' Exhibit 17.)

Q. 108. Will you please refer to this Handshy patent and state whether you find in this patent a combination of construction set forth in Claim 4 of the patent in suit?

A. I do not.

Q. 109. Will you please state your reason for the last
145 answer?

A. The Handshy patent discloses a lamp having a definite plan of regulation which consists in having a diaphragm which the patentee says may be borne downward by a spring to the necessary degree of tension and the lamp is so contrived that the gas pressure will be on one side of the diaphragm and will thereby act to open and close the valve. That is the described operation of the patent and the only described operation. Now it cannot be assumed either that the tube extends into the carbid at all or that the wire which runs through here has any effect to restrict the flow. It cannot be assumed that the tube is imbedded because if it was it would be prevented from having the movement which is described in the specification. If, for example, we assumed the tube to rise, as it would do after the lamp had been started in operation and the gas pressure became excessive the carbid would expand and prevent the tube descending again. I note that in this illustration the tube does seem to be slightly below the surface of some shaded representation, but that must be merely the sludge or ashes if anything, because if it were fresh carbid it would simply expand and burst the container, it being remembered that carbid swells to double its volume in expanding. Therefore, that must be merely the sludge or ashes, if anything. I might further note what Mr. Hansen said about the Schmitt model in this connection where he said the wire must be a fairly sizable wire, or else it would not stick, it would jump out, and from that same line of reasoning if this was a restricting wire it would stick in the tube and prevent its movement in the Handshy patent.
146 I further call attention to the fact that in each of the modifications suggested there is a construction in which the wire is either absent altogether or else the tube terminates above the perforated diaphragm. I find, therefore, that the Handshy patent does not have a water tube imbedded in the carbid in the receptacle; it

does not have a restricting rod to restrict and control the flow of water in the tube and it does not have a stirrer referred to in Claim 4 of the re-issue patent.

Q. 110. Is there any suggestion in the Handsby specification that this rods acts as a water-restricting rod?

A. There is not

Q. 111. If the relative sizes of the rod and bore of the tube be followed in constructing a lamp would the wire or rod there shown have any material effect on restricting the water flow in a carbid lamp?

A. No, it would not, because if you follow the drawing the restriction is entirely too small to have any effect whatever.

Q. 112. Referring to the Mosher patent No. 644,439, does this patent, in your opinion, contain the construction defined in Claim 4 of the Baldwin patent in suit?

A. It does not.

Q. 113. Will you please state your reasons?

A. I would first call attention to the fact that this patent has the foraminous screen or tube that I have previously referred to many times in my testimony so that the water tube represented by the letter D, the center one, can never come in contact with the carbid. On the contrary the water delivers merely to the gaseous atmosphere within the container. I next call attention to the fact that the rod or wire F, located within the plug at the bottom of the water tube D is not such a restricting rod as is referred to in the Baldwin lamp. It is really nothing more than a simple valve orifice of fixed dimensions, that is to say, a fixed width of crevice, and it would be subject to the very difficulty of clogging up that I mentioned in my direct testimony as characterizing any valve crevice on account of its small dimensions and which are differentiated from the much greater area provided by the Baldwin flow, exhibiting my diagram heretofore in evidence. The patentee evidently fully recognizes this difficulty of clogging up because he says on page 2 that the rod is continually jiggled up and down by the motion, thereby dislodging any dirt particles.

Q. 114. Just give the reference in the specification?

A. Page 2, lines 4 to 9, which is as follows: "The rod F, while being comparatively small, nevertheless has some considerable weight and hence the jarring to which a bicycle is subjected when in use will the more readily set up a continuous longitudinal reciprocation of it."

Q. 115. I think you had better begin your quote at the end of the preceding page.

The Court: This is preceded by the statement beginning at page 1, line 102.

The Witness: "By providing the rod with the annular grooves G the form of its surface is such that its longitudinal reciprocation more effectually dislodges any dirt particles which may have settled into the orifices." Of course such a comparatively short plug affords

no sensible retarding surface and hence the very thin crevice
148 which he has to take care of in this way to prevent its being
filled up by the sediment in the water. I find therefore that
this patent has no water tube with restricting rod as referred to in
Claim 4, Baldwin re-issue patent; it does not have a water tube which
is imbedded in the carbid in the container; and it of course does not
have a stirrer.

Q. 116. Referring to the Lee patent, No. 619,046, please state
whether you find in this patent the combination set forth in the
fourth claim of the Baldwin re-issue patent, giving your reasons
briefly for any opinion you may express?

A. I do not. This is a house generating plant of wholly different
character from the lamp referred to in Claim 4 and I particularly
call attention to the description in this patent on page 2, lines 15,
etc., reading as follows: "The mass of carbid is thus acted upon by
the water at all points and will produce gas simultaneously through
the whole mass. I thus achieve two points. First, in the rapid
manufacture of gas and secondly, in the utilization of the whole
mass of carbid and I avoid the retardation of the work which is
caused by a crust forming upon the body of the carbid when the
water is only supplied at one or two points." Of course the idea of
operation here is like the procedure in a gas retort, or in a gas works,
the generation effect is to be effected as quickly as possible and stored
up in the gasometer.

Q. 117. Referring to the Buffington patent, No. 23,802, please
state whether this patent contains the construction defined in Claim
4 of the Baldwin patent in suit, giving your reasons briefly
149 for any opinion you may express?

A. It does not. This patent, along with several others,
Bundy, Iden, Windham and Watt, all have somewhat similar fea-
tures and I might refer to that. In this patent there is a drop feed well
above the carbid in the container, being therefore similar to a large
class of lamps that I have previously referred to. The only point
made, I think, by Mr. Cox, was that there was another funnel-like
structure shown in Figure 2 and Figure 7 below the drip like a basin
to catch the drip and carry it down into the carbid. I call attention to
the fact that that is an entirely different sort of structure and an
entirely different action from carrying the water tube itself down
into the carbid. You have, of course, simply the drip feed as be-
fore and the water tube as referred to in the Baldwin claim ter-
minates at the orifice where the regulating valve is located. The
Buffington patent provides such a regulating valve by which the
flow is controlled, the same being marked y^3 . Now on this point as
there are several references that have a sort of drain in the carbid,
I would like to say that one of the troubles of a drip feed is that the
water falling in drops may cause a pulsing generation of the acety-
lene gas. Every drop that falls generates too large a body of gas for
immediate consumption and the pressure goes up and then falls
again and for that reason different inventors have suggested some
expedients for curing that. Some have carried a piece of yarn or
string down through the regulating valve with the idea that the

water would be conducted down instead of dropping and others have sharpened the point as much as possible so as to make the drop smaller. This plan simply provides a metal surface over which if the drops fall they can spread themselves momentarily while the water is being licked off, so to speak, by the air and gas in the carbid, in other words vaporized. Of course where you have the carbid chamber it is subject to being rapidly vaporized because the affinity of the carbid for water is such that it quickly takes the vapor out of the atmosphere and under those conditions the water vaporizes rapidly, but this funnel below the outlet affords a surface on which it can collect momentarily instead of dropping onto the carbid direct. The funnel, furthermore, has the function of opening up a hole in the carbid so that the water can reach the bottom as well as the top layers, but there is no body of water present in that funnel and it of course does not answer what is referred to in Claim 4 of the patent, that is to say, a water tube extending from the reservoir into the carbid and it does not have any function or actions corresponding thereto. There is, of course, no imbedded tube and no stirrer in this patent.

Q. 118. Referring to the Bundy patent, 608,571, please state whether you find in this patent the combination set forth in the fourth Claim of the patent in suit, giving your reasons briefly for any opinion you express?

A. I do not. This patent also contains a regulating valve by which the flow of water is regulated described in lines 98, etc., page 1, as follows: "A set P and jamb nut, p' , are screwed onto the valve stem P, inside the plug O and by a little experiment these nuts can be so set that when the valve stem is turned out until they slightly plug the valve opening will be just sufficient to supply water to the carbid at the rate necessary to produce the gas in quantity corresponding to the construction." It will be observed that the tube E is nothing but a funnel or drain, such as are referred to in my preceding answer and is entirely open to the atmosphere in the gas container, having the same characteristics that I have previously described. This patent, therefore, has no water tube extending from the reservoir into the carbid container imbedded in the carbid and does not have the water tube and restricting rod referred to in Claim 4, and does not have the stirrer.

Q. 118a. Referring to the Balieu patent, No. 611,885, please state whether this patent discloses the construction defined in Claim 4 of the patent in suit, giving your reasons briefly for any opinion you express?

A. It does not. This is another gasometer plant of the stationary sort in which a quantity of carbid is placed in a retort and supplied with a quantity of water so that the gas is generated more or less immediately and stored in a gasometer. The water is supplied through a system of pipes and as is stated in the patent in lines 81, etc., page 1, that it is designed to flow over the cover N, and also through the pipe O. In this way the water is flushed simultaneously over the surface of the carbid and down to the bottom of the carbid boiling up the mass and generating the acety-

lene as promptly as possible. There is no such action as referred to in the Baldwin patent, no water tube with a restricting rod, and no stirrer.

Q. 119. Referring to the Iden patent, No. 637,934, please state whether this patent discloses a construction set forth in Claim 4 of the patent in suit and in replying give your reasons for any conclusion you may express?

A. It does not. This patent has another instance of a funnel extending down below the drip orifice and entirely separate therefrom. What I said therefore in connection with the Buffington and Bundy patents applies to this patent also. This patent, like the others, also has a regulating valve by which the flow is secured, this being described in lines 24, etc., page 1, as follows: "The supply of water to the container is regulated by means of a valve, *a2*, the adjustment of which is provided for by the nut *a2* to which the stem *a4* of the valve is connected." This patent therefore does not have a water tube extending down into the carbid container and into the carbid mass and does not have the restricting rod referred to and does not have the stirrer.

Q. 120. Referring to the patent of Strakosch, 610,150, please state whether this patent discloses the construction set forth in Claim 4 of the patent in suit, giving your reasons briefly for any opinion you express?

A. No, it does not. This patent is an entirely different construction. It has what the patent describes as a water-regulating valve 5 and a layer of felt 6, which may also be regulated by being more or less compressed. The object of said felt layer being to enable a still more accurate regulation of the amount of water fed to the carbid receptacle." Specification 1, line 37, etc. This patent therefore contains both a regulating valve and a wick for securing the proper flow of water, two plans which are particularly differentiated from in the Baldwin re-issue patent. The water is furthermore conducted on the outside of a plug 9 in grooves and there is nothing corresponding to the flow through a water tube with a restricting rod. There is, of course, no tube imbedded in the carbid and no stirrer.

Q. 121. Referring to the Bundy patent, No. 616,889, please state whether this patent discloses the construction defined in the fourth Claim of the patent in suit, giving your reasons for any opinion you express?

A. It does not. What I said in connection with the other Bundy patent and other references applies also to this patent for there is the same regulating valve and drip feed and an entirely separate funnel into which the water drips, having the characteristics that I have previously described. In fact, in this patent there is another space outside of the funnel so that the water tube is two spaces or two stages removed from the carbid, which is shown packed between the layers of a sort of absorbent cartridge. This patent of course has neither the water tube imbedded in the carbid nor the restricting rod nor the stirrer.

Q. 122. Referring to the patent of Peck, No. 622,015, please

state whether or not this patent discloses the construction set forth in the fourth Claim of the patent in suit giving your reasons for any opinion you express?

A. I does not. This patent is another instance of a regulation of the flow from the reservoir by a regulating valve which is described in lines 97, etc., page 1, as follows: "The outer end of the inlet tube C carries ahead C' finished with a needle valve K having a thumb piece L furnished with a stop finger L,' which engages with the stop L2 to prevent the valve being opened too far." This patent is interesting as illustrating one method of conducting the water down by a sort of substitute for a wick to prevent this drop-by-drop action. In fact, the patent expressly states that it is a substitute for such an extension wick. In line 24, etc., page 1, as follows: "Made with particular reference to the avoidance of the use of a fibrous wick which is open to the objection that it is clogged by the dusty residuum left after the calcium carbid has been disintegrated by the water." The idea expressed in the Peck patent is that the drop of water will be conducted more or less slowly by coils of this spring and that they will be vaporized, as I have previously described, while they are on the way down. He describes this in line 28, etc., page 2 as follows: "As the water works between the coils of the water-distributing tube it is turned into vapor within the guard tube." I call attention to the guard tube, or foraminous tube, which entirely separates the inner coil from the mass of carbid, although the inner coil is not in any sense a water tube because it is not filled with water and contains no direct connection with water, with the reservoir, but merely conducts the drops of water down as a wick might do. There is, therefore, no water tube extending from the reservoir into the carbid container imbedded in the carbid and no restricting rod for regulating and controlling the flow of water, and no stirrer.

Q. 123. Referring to the Cason patent, N. 668,288, please state whether this patent discloses the construction defined in Claim 4 of the patent in suit, giving your reasons for any opinion you express?

A. It does not. This Cason patent discloses another instance of a large generating plant and the carbid is contained in a sort of tank, or retort, that it may be hydrated more or less promptly and the gas conveyed to a gasometer. I call attention particularly to the fact in this patent that the bottom of the carbid container is located so as to form a partition entirely below the water pipe and any possible orifices it may contain and any part that is even alleged to be a stirrer, which is one of the grates below, in other words there is a mass of carbid in the water pipe and a bottom of the carbid container below that with openings in it and then two grates below that one of which is movable. The function of these grates is nothing more or less than to shave off the dust of the carbid residuum. I might further note that this is not a minute affair of the proportions that seemed to be indicated by Mr. Cox, if I understand his testimony, when he said the work of a watchmaker would be required to fit the plug in the

bottom of that pipe. This is very evident by the appurtenances on the device, for instance, the indicator gauge 27, the crank 43 and the handle 40 and cock 88, all of which show that the devices are large and an elaborate piece of machinery. And I would furthermore note that there is absolutely no warrant for assuming any opening at the bottom of the pipe 37. This patent does not have a water pipe with a restricting rod as referred to in the Baldwin re-issue Claim 4, carried into the carbid container and imbedded in the carbid thereof, nor the stirrer.

Q. 124. In view of this fact this patent was alleged to be one of two which were alleged to be real stirrers,—to show real
156 stirrers—will you explain a trifle more fully the action of the grates, one of which was said to be the stirrer, one of the grates of this patent?

A. Well, there are two grates shown in Figures 3 and 4, one of which, the lower one 35 is stationary and the upper of which lies directly on the lower one and can be turned. From Figures 3 and 4 it will be seen that they can be turned into a position where the slats of one overlies the interstices of the other and then there are no openings for the falling through of the ash, or they can be turned to a position where there are radial openings and the fine ash can drop through. This is of course wholly concerned with the ash in that lower pan and has nothing to do with the carbid in the container above.

Q. 125. Referring to the Barrett-British patent, No. 261,999, please state whether this patent discloses the construction defined in Claim 4 of the patent in suit, giving your reasons for any opinion you may express?

A. It does not. This is merely another instance of a form of drip feed and regulating valve and is typical of a large group of lamps, which have a generally similar character to that. There is absolutely no warrant for supplying a container on this drawing as has been done. I believe by defendants' expert, and assuming proportions and actions by which this outlet should be imbedded. There is, therefore, no water tube extending a considerable distance into the carbid container imbedded in the carbid and no restricting rod as referred to in Claim 4 and no stirrer.

Q. 126. Referring to the Hallows & Tucker patent 644,910, please
157 state whether this patent discloses the construction defined in 4 of the patent in suit, giving your reasons for any opinion you express?

A. It does not. This patent is another instance of the old regulation of flow by the use of a regulating valve as described in lines 84, etc., page 1, as follows: "The water inlet controlled by the plug K, should be so proportioned with relation to the capacity of the burner that a predetermined generation of the gas to the burner corresponding to the capacity of the lighter, thus securing a steady flow of gas to the burner which effectually prevents flickering and produces an even steady flame." This lamp has the peculiarity of being what is known as the inverted type, and which, while rather a clumsy construction, has the peculiar action of al-

lowing gas pressure to act upon^o the upper level surface of the water so that if the gas pressure in the container rises it can bear on the upper level surface of the water in the outlet and depress it by cutting off the flow. I note in the description the statement in line 97, page 1, as follows: "In case of an undue accumulation or over-generation of gas caused by the clogging of the burner the excess gas finds its way down through the space between the inner casing and the generator and thence up through the water container in the space between those two casings and then through the openings M into the water chamber C, finally escaping through the vent opening I into the atmosphere." This escape of the acetylene gas in this way into the atmosphere is objectionable in the mine lamp and it also illustrates the different character of this lamp. I might also note the provision by the inventor of an oil lamp B which he states is provided to be used in case of any failure of the acetylene which would seem to show a limited confidence in the action of this rather peculiar arrangement. There is no water tube extending from the reservoir into the carbid container and imbedded in the carbid as called for in the Baldwin re-issue Claim 4 and no restricting rod to restrict and control the flow of water and no stirrer.

Q. 127. In making the statement there is no restricting rod in the water tube in the construction shown in this patent, have you noted the presence of the rod H?

A. Yes, that is merely a valve rod and has no effect to restrict and control the flow of water. The proportions shown in the drawing are evidently much too small to have it act at all in this way, to restrict and control the flow of water.

Q. 128. Referring to the Windham-British patent No. 20,537, please state whether this patent discloses the construction defined in Claim 4 of the patent in suit, giving your reasons for any opinion you express?

A. It does not. This patent is merely another instance of the use of regulating valve to regulate the flow of water and a drip feed and a provision of form of funnel, or drain, below, having the general characteristics of construction and action as I referred to in connection with the Buffington and other patents. It obviously does not have a water tube extending from the reservoir into the carbid container and adapted to be imbedded in the mass of carbid therein, nor does it have the restricting rod to restrict and control the flow of water, nor the stirrer.

Q. 129. Referring to the Holliday British patent No. 34,360, of 1897, please state whether this patent discloses the construction defined in Claim 4 of the patent in suit, giving your reason for any opinion you may express?

A. It does not. This patent is still another instance of type of lamp having a regulating valve drip feed and furthermore furnishes an example of a fibrous or wick extension downward from the regulating, or drip valve. This is intended to afford a lead or conductor for the drops of water preventing the pulsating generation of gas which might follow from the freed drops as I have previously

described. The lamp obviously contains no water tube extending from the reservoir into the carbid container and adapted to be imbedded in the mass of carbid therein, nor does it contain a rod to restrict and control the flow of water as referred to in Claim 4. It also does not have the stirrer.

Q. 130. Referring to the patent of Kerr, No. 596,937, please state whether or not you find therein the construction called for in Claim 4 of the patent in issue, giving your reasons for any opinion which you may express?

A. I do not. This is another instance of a large stationary gas plant furnished with a gasometer to collect and store the gas when generated. I find that this apparatus is equipped with a series of barrels or chambers, mounted on a sort of turntable as shown in figure 2 and these are alternately charged up and discharged by manipulation apparently quite similar to the working of a gas retort in a gas works. That is to say, the seal is broken and one of the retorts is removed and a new one inserted with fresh carbid, which is thereupon put into a position where it can be flooded with water

and the generation of gas effected more or less immediately, 160 in other words, this is done immediately and promptly and thoroughly as possible so as to get the gas over into the gasometer and permit the operation to be continued with proper expedition and commercial rapidity. Apparently the structure is quite similar to common practice in commercial works of flooding water on all chemicals where a hydration or similar chemical action is desired. It is customary to have some sort of a stirrer, or agitator, frequently driven by an electric motor by which the mass is churned up and rolled around so that the chemical action may be as thorough as possible. I might refer to the operation of what is described as the agitator on page 2, line- 41 to 43. I also call attention to the description in lines 28, etc., as follows: "Tube E may be supported above the level of the carbid receptacles by any suitable means and the agitator and agitator rod dispensed with if it be found that no agitation of the carbid is necessary." The agitator is evidently revolved by the workman by a sort of handwheel, or brake wheel, for convenient turning by the workmen during the interval of action and between the intervals while the retort is being turned and charged and discharged. I also call attention to the size of this apparatus which seems to be somewhat the proportions of city gas works, estimating from the size of the various fixtures, for example, the hand wheel or brake wheel and the faucet below the character M at the lower left-hand corner of Figure 5. This apparatus has nothing corresponding to what is referred to in Claim 4 of the Baldwin re-issue patent. It does not have the water tube extending from the reservoir into the receptacle for calcium carbid with a restricting rod as referred to in this claim, nor does it have the stirrer as referred to and described in this claim with any of the functions of the stirrer described in the Baldwin patent.

Q. 131. Referring to the patent of Watt, No. 638,898, state whether or not you find therein any construction corresponding to

that called for by Claim 4 of the patent in suit and give your reasons for any opinion you may express?

A. I do not. This is still another instance of group of patents having a sort of drain or basin below the drip feed afforded by a regulating valve. This patent contains a regulating valve described in lines 8, etc., page 1. The basin, or tube, in the carbid is shown in Figures 2 and 5 and of course is merely an open funnel, or drain, entirely exposed to the gas in the carbid container. It has only the principles of action and operation that are discussed in connection with the Buffington and other patents of this class. There is no water tube extending from the reservoir a considerable distance into the carbid container and imbedded in the mass of carbid therein and no restricting rod referred to in Claim 4 of the Baldwin re-issue patent. There is also no stirrer.

Q. 132. Referring to the Williams patent 619,814, please state whether this patent discloses the construction defined in the fourth Claim of the patent in suit, giving your reasons for any opinion you may express?

A. It does not. I might particularly call attention to this patent as being quite similar in its disclosure to what is referred to in the Mosher patent. In the Williams patent there is a short plug with a rod which fits up quite closely and the idea is that that will form a fixed crevice of small dimensions through which the water can flow instead of the use of the variable adjustments and difficulties of a regulating valve with an index, but such a minute crevice without any sensible retarding surface such as is provided in the Baldwin patent is so fine that it collects sediment and minerals and organic matters from the water and this Williams patent again recognizes that difficulty and provides for it for he has a flushing-out apparatus. He has a plunger 9 which he can tap with his finger whenever necessary and which opens up a cutaway portion of the plunger rod above so that the water can flow through and sluice out any particles of dirt that accumulate in this way. He describes that in the following words: "To clear the discharge passage the rod 9 is made movable longitudinally of the discharge passage so that the fine particles of solid matter which clog the passage may be broken loose and the passage of the water restored." I call attention to the fact that there is no water tube extending into the carbid container so as to be imbedded in the carbid therein and no stirrer and there is no water tube and restricting rod having the characteristics that are described.

Q. 133. Did you note the demonstration given by Mr. Hansen of the adjustment of the valve of the defendants' lamp here in suit?

A. I saw him.

Q. 134. You have expressed the opinion that this valve in the defendants' lamp is not a regulating valve. Is your view changed by the demonstration given by Mr. Hansen?

A. No, because that is a mere milled nut and it is entirely different from anything which can be particularly used as a regulating valve and which must have a pointer or index, or something of that sort, or at least a sufficiently sizable ex-

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tension so that it can be moved by minute graduations. It would be impossible, as a practical proposition, to operate that as a regulating valve and I do not believe it is intended to be so operated.

Q. 135. Referring to plaintiffs' Exhibit No. 13, "Justrite Directions" I find the statement, "After the lamp is filled open water valve on top by giving it a few turns. Wait a minute and then light. Is that description, or direction there given in accordance with your understanding of the way the lamp should be operated?"

A. Yes, that is in accordance with my idea exactly.

Q. 136. That is the way they tell the miners to do?

A. Yes.

Q. 137. Referring to defendants' Exhibit B, half section, does this lamp correspond in all respects with defendants' Exhibit No. 2 defendants' lamp?

A. I merely note what I observed in my direct testimony in examining this section that the water feed has been cut off so as to be apparently about a quarter of an inch higher up than the bottom of the container than in the actual proved infringement.

Mr. Rice: That closes the direct examination.

Cross-examination by Mr. Offield:

X Q. 138. Referring to Complainants' exhibit "Justrite directions" Exhibit 13, regarding the instructions for lighting as just read by you upon the record, please state whether or not you do not find after the paragraph which you have read upon the record

164 the following statement: "A little careful study will soon teach you to obtain good results"?

A. Those words are embodied in the paragraph.

X Q. 139. What do they mean in your mind?

A. Well, I should say they meant that the miner would speedily find that he could obtain the correct stirring action of the lamp by properly turning the stir rod.

X Q. 140. Not properly turning the valve, in your understanding?

A. I notice that the words that you quote directly follow the reference to the wire in the paragraph.

X Q. 141. Refer to the whole preceding paragraph?

A. Immediately preceding those extracts with reference to the wire.

(Discussion between Court and counsel.)

X Q. 142. There are two noticeable differences between the Schmitt lamp as referred to by you and as illustrating the original Schmitt lamp and the structure shown in the Dingler publication. The differences that I note are these: First, in the Schmitt lamp as offered in evidence by you the wire without reference to its function only extends to the end of the water tube, whereas in the Dingler showing, as well as in the Schmitt patent, the wire is shown as extending considerably beyond the water tube in both references. That difference exists as I state upon the record, does it not?

A. I note that in this actual lamp the end of the wire only projects a short distance.

X Q. 143. You say the end projects a short distance in that lamp?

A. Yes.

165 X Q. 144. Just the tip sticking out?

A. Yes, whereas in the illustration it is continued for certainly a very measureable distance.

X Q. 145. I notice the further difference that in the Schmitt lamp which you have referred to that the water tube is shown as lying either in the same plane or above the plane of the lower edge of the lamp. Please state whether or not you can ascertain from the perspective view of the Schmitt lamp as shown in the Dingler publication whether or not the water tube as shown in that publication extends below the plane of the lower edge of the lamp?

A. Well, as that is merely a perspective view in the picture you can't get any sight on it to tell just how high or how low it terminates, but I do note that in the Schmitt patent the level of the water outlet is above the plane taken across the rim at the junction of the carbid container.

X Q. 146. Then as a mechanical expert, and supposedly you are familiar with mathematics to a certain degree, and you are unable to ascertain whether or not that rod projects beyond the lower face of that lamp because the lamp is shown in perspective view, is that correct?

A. Well, of course any perspective view can be analyzed like an astronomical proposition and a definite result predicated on your analysis by the rules of orthographic projection, for example, but of course as a matter of fact when a perspective view is made by an artist he is not controlled by those mathematical constructions or orthographic projections, and therefore you can't reason back from any perspective view in that way.

166 X Q. 147. So from the perspective view as shown in that publication that is not sufficiently accurate to enable you to ascertain whether that tube projects beyond the plane of the lower edge of the lamp or not?

A. Well, I hesitate—you say how accurate. This perspective view here is not sufficiently accurate. I don't know how accurate it is. That is just the point.

X Q. 148. I am not here to quibble with you on how accurate that view is, but what I ask is can you make a reasonable measurement upon that view to find out within a reasonable degree whether that tube extends beyond the plane of the lower edge of that lamp?

A. Well, I should say from the illustration that it might extend below the plane of the lower edge in that view.

X Q. 149. As much as a quarter or one-eighth of an inch below?

A. No, I do not think so.

X Q. 150. How are you ascertaining that fact?

A. I am ascertaining it by the fact that the outlet is shown nearer one side of the ellipse than the other.

X Q. 151. At any rate the lamp offered in evidence does not correspond with the lamp shown in the Dingler publication to the ex-

tent that — the lamp offered in evidence the tube terminates above the lower edge of the lamp and in the Dingley publication it unquestionably terminates below the lower edge of the lamp. Is that not correct?

A. I think it is only proper to mention that this pictorial illustration made by an artist might easily have been made that way from such a lamp as this.

X Q. 152. The same way that the rod might have been a little smaller in the drawing than as in actual practice?

A. But it seems to be true, as you say, that while in this 167 actual lamp which I possessed the outlet is a shade above the plane of the rim while in this pictorial illustration it is a shade below.

X Q. 153. How long have you had that lamp in your possession?

A. About three years I think.

X Q. 154. Who gave it to you?

A. Mr. Owen M. Scripture.

X Q. 155. Have you put in a new wire rod into the lamp?

A. I have not. I have never touched it.

X Q. 156. You didn't file the end of the rod in which the wire projects?

A. Absolutely not.

X Q. 157. I asked you that question because there appears to be evidence of recent filing marks upon it, I mean the lower end of the rod, Mr. Proctor, the heavy rod at the top?

A. This rod.

X Q. 158. That rod there seems to have new filing marks upon it.

A. There are none and there is nothing that I have touched; I haven't touched it at all in any shape or way.

X Q. 159. Just look at the end of the tube on your magnifying glass, the end of the wire and see if that seems to be a recent fracture, the end of the restricting wire, see if there seems to be a recent fracture at the end of the wire?

A. It is not a recent fracture as it is easy to observe through the glass. It is just as much tarnished and blackened at the end as it is anywhere else and of course that brighter portion is simply due to the fact that it wears against something at that point.

X Q. 160. It is a fact, is it not, that in the Schmitt lamp which you have referred to a follower plate and a spring is used for pressing upon the top of the carbid?

A. Yes.

168 X Q. 161. And it also is a fact that that same kind of follower plate and same kind of spring is shown in the Baldwin patent No. 656,874, is it not?

A. I think so, yes.

X Q. 162. And it is also a fact that in the Schmitt British patent there is no follower plate nor any spring disclosed in that patent?

A. Not in the patent unless you take this article —

X Q. 163. No, I am asking about the patent?

A. Not in the patent itself.

X Q. 164. And it also is a fact that in Figs. 2 and 3 of the re-issue patent no spring or follower is shown in either of those constructions, which is equally true of the original from which that patent was re-issued?

A. Yes.

X Q. 165. In quoting certain portions of the specifications from the Mosher patent, you terminated just before this sentence found between lines ten and twelve of page 2 as follows: "The tapered form of the top of the plug E provides a pocket for the accumulation of sediment." It would seem logical to conclude from that paragraph of the specification that sediment may possibly enter in the perforated tube of the Mosher structure?

A. Is that a question?

X Q. 166. Yes, is that not correct?

A. Yes, that is correct.

X Q. 167. I show you the tube that has been taken from the Schmitt structure that you referred to and ask you if you don't find that there has been a considerable deposit of slack lime on the interior of that tube?

A. Yes.

X Q. 168. And there is also clear evidence upon the under side of the carbid chamber that is attached to the upper part of the lamp that there is also a deposit of slack lime and carbid upon
169 that portion of the lamp as distinguished from the movable receptacle?

A. Yes, this well illustrates the manner in which the lime is deposited on all points exposed to the gas within the container.

X Q. 169. Does the rod or wire of the Schmitt lamp which you have referred to in any way restrict the orifice which constitutes the water outlet of that lamp?

A. No. If the valve is opened fully, the regulating valve is opened as though it were a shut-off valve, the water will flow through at a rate many times—

X Q. 170. What I asked is, doesn't that wire restrict that orifice?

A. No, not to any extent.

X Q. 171. So, if you take the wire out the water will flow through in the same manner?

A. Oh, no, of course, its presence there must necessarily make the opening smaller than it would be if it were not there. There is no doubt about that.

X Q. 172. I am glad to get that concession. You mean to say that that wire in no sense restricts that orifice?

A. Well, it restricts it to that extent, but I thought you were talking about the relation of actual flow, and from that standpoint it has no restricting function.

X Q. 173. And in your judgment that wire does not in any way enter into the regulation of the flow of water through that orifice?

A. Only to the extent of furnishing something to clear away the lime which might be deposited on the outlet and possibly to also make the drops a little bit smaller so that they would drop finer and oftener.

X Q. 174. But not in the sense to restrict the orifice in any way and to regulate the flow?

170 Mr. Rice: I object if your Honor please. The point here, as I understand is not a pure question of theoretical flow. It is a question of flow for certain purposes. In other words it is the amount of flow necessary for running the carbid lamp. Of course we do not take the position, nor is it material here whether or not a filament of wire run through a sewer pipe will restrict the flow of that pipe. Obviously it will to a certain extent. The question here is on the effect of the flow in these lamps, whether there is a material effect in restricting the flow of these lamps for the purposes here described and these questions are immaterial.

The Court: Mr. Proctor has explained his position. He can answer this, it doesn't make any difference.

By Mr. Offield:

X Q. 175. Just one more question. Have you ascertained the area of the orifice in the Schmitt lamp at the lower end of the outlet tube?

A. You mean irrespective of the wire; I haven't made any measurements anyway.

X Q. 176. I mean with the wire in it?

A. I have no measurements of this outlet.

Mr. Offield: That is all.

The Court: Is there anything more?

Mr. Rice: Just one more question. I would like to ask one more question in view of a certain suggestion.

171 Dedirect Examination by Mr. Rice:

Re-D. Q. 177. Since you first got that lamp has it been out of your possession?

A. It has not.

The Court: I haven't any doubt as to that.

Mr. Offield: I don't dispute that.

Mr. Rice: I would like one more thing if your Honor please.

Re-D. Q. 178. I would like you to please read into the record the inscription on the top of that lamp?

A. "Schutz mark" and under that "Schmitt's original", with what appears to be a trademark of a mallet in a clenched fist.

Mr. Rice: I think I want to put on one more witness, but if your Honor will allow me to go over to tomorrow I may not want to.

The Court: All right. I will let you both go to tomorrow.

Adjournment taken until Thursday, January 7th, 1915, at 10:30 A. M.

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NEW YORK, Thursday, January 7th, 1915.

Trial Resumed.

WILBUR A. COCHRANE, called as a witness on behalf of the complainant, after being duly sworn, testified as follows:

Direct Examination by Mr. Rice:

Q. 1. Please state your occupation Mr. Cochrane?

A. Manager of the acetylene department of John Simmons Company.

Q. 2. Does the acetylene department include the manufacture and sale of miners' cap lamps?

A. It does.

Q. 3. What are your duties generally as manager of this department so far as it relates to the matter of acetylene cap lamps?

A. I have full control of the department and give my personal attention the sale and manufacture of the lamps.

Q. 4. How long have you been in charge of this acetylene gas department of John Simmons Company?

A. Since I started the department in February, 1905.

Q. 5. How long have you known of the Baldwin acetylene miners' cap lamp such as is involved in the suit here?

A. Since the first one was made in the latter part of 1905.

Q. 6. How generally have you been familiar with the sale of acetylene miners' cap lamps?

A. Naturally I have made a study of that and kept close watch of the development of the business and of the different makes of lamps.

Q. 7. Was there any acetylene cap lamp on the market when Baldwin started to market his Lamps?

A. There was not any.

Mr. Offield: I object to the question unless the question is limited to the specified knowledge of this witness.

Mr. Rice: I have already qualified him.

The Court: I will assume that he is answering from knowledge.

Q. 8. Prior to the filing of the bill of complaint in this suit which was early in 1913 what miners' acetylene cap lamp, or lamps were marketed to any considerable extent throughout the country, aside from the Baldwin lamp?

A. There was not any excepting that the Justrite commenced to show.

Q. 9. Have there been any attempts to market other miners' cap lamps, acetylene cap lamps?

A. Yes, sir, quite a few of them.

Q. 10. With what success?

A. They would last for a time and then die a natural death.

Q. 11. Mr. Hansen has stated that the time the Justrite went on the market, the following lamps either were or had been on the market—Bright Light, Maple City, Pathfinder, Scranton, Victor, Simplex, Black Diamond—can you produce samples of these lamps?

A. I can and do produce them. I think Mr. Hansen is probably mistaken in some of those lamps; they probably followed shortly after the Justrites. I here produce the Scranton lamp.

Mr. Rice: I offer it in evidence.

(Marked Complainants' Exhibit 18, Scranton lamp.)

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By the Court:

Q. 12. Just briefly state the characteristics?

A. This is a needle valve lamp; it operates from a needle valve at the end of the water tube.

This (Indicating) is either a Simplex or a Black Diamond, they are both the same, simply a change in the name.

By Mr. Rice:

Q. 13. Are they just alike?

A. Just alike, the same lamps only put up in different boxes, one under our name and one under another name.

Mr. Rice: The two lamps are offered in evidence as Simplex—Black Diamond lamp.

(Marked Exhibit 19.)

The Witness: The Maple City lamp, there are two of them, one made with the valve was the first one put out and then that one followed without the valve. Both lamps are equipped with a foraminous tube over the water tube.

Mr. Rice: I offer it in evidence.

(Marked Exhibit 20, Maple City lamp.)

The Witness: I here produce two Bright Light lamps, they are fitted with needle valves and foraminous tube.

Mr. Rice: I offer it in evidence.

(Marked Exhibit 21, Bright Light.)

The witness: Here is the Pathfinder, that has a short tube with a longer rod, one side of which is filed flat and is also fitted with a foraminous tube.

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Mr. Rice: I offer it in evidence.

(Marked Complainant's Exhibit 22, Pathfinder.)

The Witness: This is a Victor lamp, with a short water tube and needle valve and with a fixed foraminous tube.

Mr. Rice: I offer it in evidence.

(Marked Complainant's Exhibit 23, Victor lamp.)

Q. 14. Are any of these lamps now on the market that you have produced?

A. Not in the general accepted term, there are probably some on sale somewhere that have been there for some years, what they call job lots.

Q. 15. Mr. Hansen also referred to the Bleser lamp, was this lamp on the market around 1910 and '11?

A. No, sir, it was under injunction.

Q. 16. Mr. Hansen stated that the Simmons Company did not market any Baldwin lamp having shut off valve prior to the time when the Justrite lamp came into the field—is that correct?

A. It is not.

Q. 17. When the John Simmons Company first marketed the lamp having a valve which controlled the flow of the water into the upper opening of the water feed tube?

A. In the beginning of 1910.

Q. 18. Can you produce one of those lamps?

A. Yes, sir.

Mr. Rice: The lamp produced by the witness is offered in evidence and marked Exhibit 24—1910 Baldwin valve lamp.

(Marked Exhibit 24.)

176 Q. 19. How extensively were these lamps like Exhibit 24 marketed?

A. They were shipped in thousand lots.

Q. 20. In 1910?

A. In 1910, right into Illinois.

Q. 21. Whereabouts in Illinois?

A. One customer in Illinois had probably 20,000 in Peoria, and we shipped them in gross lots into Danville and Witt.

Cross-examination by Mr. Offield:

X Q. 22. Substantially all of these lamps which you have referred to embody valves, do they not?

A. I think all but the one Maple City.

Q. 23. Isn't it a fact that the Pathfinder and the Scranton lamps have had considerable sale in the anthracite coal regions in the United States?

A. The Scranton did for a time, but the last few years it has been practically a dead issue.

X Q. 24. Is the Pathfinder still selling in these anthracite regions?

A. Not so that we would notice it.

(Argued and Submitted.)

177 *Opinion of Judge Mayer.*

United States District Court, Southern District of New York.

FREDERIC E. BALDWIN and JOHN SIMMONS, Intervenor, Plaintiffs,
vs.
ABERCROMBIE & FITCH COMPANY and JUSTRITE MANUFACTURING
COMPANY, Intervenor, Defendants.

Suit for infringement of Claim 4 of reissue U. S. Letters Patent No. 13,543 dated March 11, 1913, and granted to Frederic E. Baldwin for "Acetylene Gas-Generating Lamp."

James Q. Rice and M. C. Massie of New York City for Plaintiffs.
James R. Offield and Charles K. Offield of New York City for defendants.

MAYER, *District Judge*:

The original of this reissue (No. 821,850) was before the Circuit Court of Appeals for the Seventh Circuit in *Bleser v. Bladwin*, 199 F. R., 133 and (inter alia) was held valid but not infringed. The opinion is dated April 23, 1912 and on February 5, 1913, Baldwin filed his application for a reissue which was granted on March 11, 1913, only about five weeks thereafter.

178 This reissue patent was recently considered by Judge Orr in the Western District of Pennsylvania, in *Baldwin v. Grier Brothers Company*, and held by him valid, (215 F. R. 735). Since the trial of the suit at bar, the Court of Appeals for the Third Circuit, has decided the appeal in the *Grier* case and, reversing the court below, has held that the reissue was broadened over the original patent and that "thus construed Claim 4 cannot be sustained."

Passing for the moment the question of the validity of the reissue, two courts have decided that what Baldwin did rose to the dignity of invention and with that conclusion I heartily agree. True, the generation of acetylene gas was old and acetylene lamps were old when Baldwin undertook the problem, but, "the difficulty in the art," as Judge Orr said, "was to regulate the flow of water to the carbide so that there will not be a greater amount of gas liberated by the chemical action than is required for use."

While Baldwin's invention was intended for use as a lamp for bicycles, automobiles, and miners, its commercial utility has been principally in connection with miner's cap lamps and, therefore, we are dealing with a device in which safety and simplicity of construction and operation are controlling considerations.

The successful operation of such a lamp depends upon supplying the water continuously at the proper rate. If the water is fed too fast, gas will be generated too rapidly and will blow through the burner; if fed too slowly, the flame will die down and if fed not uniformly, the flame will be unsteady.

"The method which I have invented," said Baldwin in his specification, "for securing the proper feed under all circumstances without the above objectionable features is to make the bore of the duct of comparatively large size, extend the tube which forms the duct downward so that its end will be always embedded in the carbide and then restrict the duct by means of a wire or rod preferably centrally located therein to leave a channel of the proper size. This arrangement is simple; but in a long experience it has been found to be entirely successful. It is possible to secure the correct drop-by-drop feed with a duct of considerable size, since the friction of the water on the large area of the tube-wall and wire reduces its flow. This retarding friction may be regulated by varying the size of wire used. The duct does not become choked, since if foreign particles are deposited therein the water can take a zigzag course around it, without the supply being appreciably affected. If it is at any time necessary to clean the tube, the wire is simply reciprocated and rotated a few times from the outside of the lamp without disturbing the position of other parts. This nice regulation

of the flow enables me to entirely dispense with the troublesome adjustment of the valve. If a valve is used at all, it is employed to shut off the flow entirely and not to regulate it. The construction just described is shown in Fig. 1, in which L is the water-supply tube, and N the constricting wire. In this illustration the size of the parts is

of course exaggerated. Fig. 2, shows a similar construction
 180 with a valve M on the constricting wire M' which may be sent by turning the screw-plug M2 in the top of the lamp. In some cases, however, there is employed in connection with the means for introducing the water into the mass of carbide, a device in the nature of a stirrer, which on proper manipulation may be used to break up the mass of carbide surrounding the outlet of the water duct and which by having become slaked and caked by the action of water prevents the proper percolation of the latter to the unslaked carbide in the receptacle, Fig. 1. As such device I employ a stem or rod N, which extends down through the tube L and is bent at substantially right angles to form an arm N'. This rod may form a prolongation of the valve-stem M' of Fig. 2 or in case no valve is used, may extend from the top of the lamp down through the water reservoir, as shown in Fig. 3."

What Baldwin claimed (in Claim 4 here in controversy) was:

"4. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbide, of a water-tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbide in the receptacle, and a rod extending through the water tube, and constituting a stirrer to break up slaked carbide around the outlet of the water-tube, *the rod operating to restrict and thus control the flow of water to the carbide, as set forth.*

181 The function of the stirrer is described in the specifications as follows:

"*It will be understood from what has been said that the function of the stirrer is to break up, pierce or disturb the particles of the slaked carbide mass which, when the lamp is in use, forms at the delivery end of the tube. This slaked carbide mass tends to solidify and either shuts the water off altogether or restricts it so that less water is delivered from the tube than the lamp demands for efficient operation. As it is sufficient under certain circumstances to insure the requisite water flow by so manipulating the stirrer, as to pierce, break up, or loosen the slaked carbide mass immediately around or at the mouth of the tube, it is obvious that the stirrer need not always be formed with a bent end or so as to extend radically from the mouth of the tube.*"

The underlined parts of the above quotations show what was added in words in the reissue over the original patent.

The most striking characteristic of the Baldwin lamp is its departure from the prior art in that the water tube instead of terminating above the carbide or being protected by a screen, is extended down and buried in the carbide mass.

The stirrer is also an important feature because it obviates the choking apparently invited by burying the end of the water tube in the

carbide mass. By making the water restricting and controlling rod movable, and by having its end protude from the end of the water tube, a device is produced which properly manipulated may be used to break up the mass of carbide surrounding the outlet of the water duct. After the lamp has been running for a time the sludge which forms as the carbide is hydrated packs around the end of the water tube and prevents "the proper percolation of the water to the unslaked carbide" in the carbide receptacle. The stirrer so disturbs the sludge at the end of the tube, that the normal water flow is resumed.

It seems unnecessary to consider at length the prior art patents which were before the Courts in the two previous cases, but in this suit, over twenty prior art references were introduced, of which thirteen (if my count is right), now appear for the first time. Of these, the publication in Dingler's Polytechnisches Journal, a German technical journal, is the only one worthy of consideration and that in connection with the Schmitt British patent No. 15,688 of 1898 which was in the Grier case.

Anyone interested in the discussion of the Handshy (No. 591,132) Marechal (British No. 29,405) or Mosher (No. 644,439) patents may refer to the testimony of plaintiffs' expert, Mr. Proctor, whose views, as to these patents I fully accept.

In the Schmitt British patent no disclosure is made of the tube embedded in the carbide nor is there shown a restricting rod or a stirrer such as in the Baldwin patent and commercial structure.

In the Dingler publication, the disclosure is of an acetylene lamp of the drip tube with a water controlling valve and a screen tube to keep the carbide away from the end of the drip tube—in other words, Schmitt's theory was almost the opposite of Baldwin's.

Curiously, Mr. Proctor came into possession of a bicycle lamp (Exhibit 15) of whose authenticity I am entirely satisfied, which seems to embody the Schmitt invention. One need not examine this physical structure to realize the greater simplicity and efficiency of the Baldwin device and to conclude that Baldwin accomplished a highly meritorious result.

As has been said more than once, often the prior art shows how little has been contributed by a claimed invention but quite often it discloses how much the last man by, perhaps, only some little change or addition or omission of an element, has advanced; and while the patent in suit is far from a pioneer, the Baldwin lamp has practically been a pioneer commercially of miner's acetylene cap lamps and deservedly so.

Doubtless the manufacturers of carbide, in order to sell their product, have helped in every way they could, to introduce a carbide consuming device in order to displace candles and oil lamps, but that effort alone was not enough to accomplish the sale of over a million of these lamps in less than eight years—a result achieved only after overcoming the prejudice of the miners and the opposition of public officials in some quarters.

But Baldwin, like many a meritorious inventor has had his

troubles. By the construction given to the claim in the Bleser suit, it would seem that Claim 4 as then phrased, might be construed as covering any rod in the water tube to be embedded in the carbide which would act as a stirrer and not as limited to a water
184 restricting and controlling rod also constituting a stirrer.

Under such circumstances it is not easy to determine what to do. Shall a reissue be applied for or shall an attempt be made to secure a different result in a different circuit, in the hope of thereby reaching the Supreme Court?

Baldwin decided to apply for a reissue and now the reissue is attacked as broadening the invention and as failing in every respect, to come within the remedial purposes of the reissue statute.

Reissues often present troublesome questions but the ultimate test, I think, is good faith. The extremes of obtaining what is justly due on the one hand and endeavoring to lasso the art on the other, are illustrated in *Motion Pictures Patents Co. v. Lammle, et al*, 214 F. R. 787, and *National Casket Co. v. Stolts*, 197 F. R., 940; affirmed 204 F. R., 983.

In this suit at bar, I am satisfied that the patent office was right when it promptly allowed a reissue.

Let me follow the history of the patent and its commercial exploitation.

The application for the original patent, No. 821,580, was filed July 15, 1903 but was not granted until May 22, 1906. About July 1903 Baldwin manufactured a large gang lamp (holding about three pounds of carbid) by means of which several men could work. This lamp had the bent arm or stirrer as it is called.

As early as December 1905, however, the miner's cap lamp was made and early in 1906 it was put on the market, and in this
185 was the straight rod, which, among other things, has characterized the commercial lamp ever since.

Thus, even before the grant, Baldwin exemplified practically in an actual device which went extensively into use, the precise combination which is now before us. The straight rod idea was thus not after-acquired from some other source but was an alternative form, applicable to a small lamp in which the area of agitation was much smaller than that of a gang lamp.

Between 1906 and 1909, when the suit of *Baldwin v. Bleser* was begun, there was no occasion for Baldwin to bother himself about the patent. He had the right to rely upon what the Government had given him and so far as the evidence discloses, nobody questioned the validity of the patent.

In April, 1911, the Circuit Court in *Baldwin v. Bleser* entered its decree holding the patent valid and infringed and certainly while that decree stood, there was no occasion for Baldwin to apply for a reissue.

Shortly after this, to wit: in July, 1911, defendant *Justrite Co.*, sold its first alleged infringing lamps but there is no testimony showing that knowledge of such sale came to plaintiffs.

On April 23, 1912, the Circuit Court of Appeals handed down in

Bleser v. Baldwin, and then for the first time, the problem of what to do was presented to Baldwin.

It is urged that the construction of the oriental patent limits the stirrer element to a bent arm and that to construe it as including a straight rod would be to broaden by reissue.

But the testimony is convincing that the straight stirrer and the bent stirrer function exactly the same. One is suitable for a
186 small area of carbid and the other for a large area. They both stir and I confess myself unable to see how a stirrer is not a stirrer.

As is well understood, claims are drawn to protect, if possible, against ingenious attempts at infringement and, so we usually see one claim in a series broader or narrower than another.

If Baldwin meant to restrict himself to a bent stirrer, why the qualifying words (underscored in Claim 2 and not in Claim 4.

"2. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a tube extending from the former into the latter so as to be embedded in the mass of carbide contained in the receptacle, a rod extending from a point outside of the lamp through the tube and into the carbide-chamber and *having its end bent to form a stirrer for breaking up the slaked carbide around the outlet of the water-tube, as set forth.*"

"4. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water-tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbide in the receptacle, and a rod extending through the water-tube and constituting a stirrer to break up slaked carbide around the outlet of the water-tube, as set forth."

I am not unmindful of the fact that the drawings and description refer to a bent rod or arm but the real test, in such situations,
187 was laid down as early as in *Winans v. Denmead*, 15 How. 330, and has often been applied. (See *Hutter v. DeQ. Bottle Stopper Co.*, 128 F. R., 283, as expressing the view of this Circuit.

I see nothing in the language added in the re-issue to the original specification to warrant the conclusion that the patent was thereby broadened as to this point.

The breaking up or stirring function is more fully described in words but no functional change is described. Possibly "pierce" might have been left out but that, as a matter of words, is de minimis in this case.

On this "bent" and "straight rod" question, I am firmly convinced that the reissue is valid and that the claim must be construed as including a straight rod and as so constructed is not a departure from the original patent.

I fully realize that this puts me in disagreement with the Court of Appeals for the Third Circuit—a result which I would have preferred otherwise for in addition to the desirability of comity, I ap-

preciate the experience and the high standing of that Court. Yet I cannot escape the responsibility defined by Mr. Justice Brown in *Mast, Foos & Co. v. Stover Co.*, 177 U. S., at page 488.

The conclusion which I have stated was arrived at prior to my knowledge of the opinion in the Grier case and, after careful consideration, I am unable to change my views.

There is, however, a further question.

Mr. Offield, for defendants, urged with much force and ability that defendants' construction embodied all of the elements of the original and abandoned Claim 6 of the file wrapper and that
 188 reissue Claim 4 cannot be extended to embrace subject matter subsequently disclaimed and abandoned in original Claim 6.

The new part of Claim 4 added by the reissue, described the operation of the rod as follows:

"The rod operating to restrict and thus control the flow of water to the carbide."

The original Claims, Nos. 1 and 6, in the file wrapper, were cancelled. Cancelled Claim 1 did not include a stirrer. As a stirrer was an element of Claim 4 of the original patent as finally allowed, and is an element of the same claim of the reissue, it is clear that there is no question of estoppel interjected into the consideration of the effect of this cancelled Claim 1 of the file wrapper.

Original Claim 6 included a water tube and a restricting rod and was set forth as follows:

"6. In a lamp of the kind described, the combination with a water reservoir, and a receptacle for calcium carbide, of a tube extending from the former into the latter so as to be embedded in the mass of carbide contained in the receptacle, a rod extending from a point outside the lamp, through the tube into the carbide receptacle, restricting the tube to permit only a predetermined quantity and rate of flow of water into the carbide, and a valve to cut off the supply of water to the receptacle, as set forth."

It will be noted that this language is broad; that it does not describe in words a stirrer; that it also includes a valve which is an
 189 element not included in either Claim 4 of the original patent or Claim 4 of the reissue and which, in my opinion, is a mere addendum not playing any part in the action of the device nor the combination which constitutes the invention. It is true that Exhibit B of the file wrapper shows a straight rod going through the water tube and embedded in the carbide receptacle; but it is equally true that what the inventor and the Patent Office examiner were skirmishing about was a matter of phraseology. Had the situation ended there, the cancellation of Claim 6 might possibly have been constructed as an estoppel but the significant and controlling fact in the history of this file wrapper is that after Claim 6 was cancelled, Claim 4 of the original patent was allowed. That claim clearly described the rod as constituting a stirrer. Further, Claim 6 was rejected on the Baldwin patent No. 656,874, the Peck patent No. 662,105, the Van Praag patent No. 705,166, and the Schmitt British patent No. 15,688. The study of those patents as explained in the

testimony of Mr. Proctor, and as I have outlined supra in part, will demonstrate that as prior art references they were a good distance behind what Baldwin was trying to show to the Patent Office was his invention.

The file wrapper satisfies me that the examiner originally allowed claims containing the stirrer which now constitute Claims 1, 2 and 3 of the patent and that after Claim 6 was cancelled, he allowed a claim (to wit: Claim 4), broader than Claim 6 in that it omitted the valve, and narrower than Claim 6 in that it definitely included the stirrer.

I fully agree with plaintiffs that if defendants' lamp, aside from the fact that it includes a valve, had a water restricting rod which did not constitute a stirrer, and if the patent had been re-issued to cover a combination which was otherwise like Claim 4, but did not include a stirrer, it could be successfully urged that the reissue should not be sustained against such a lamp.

The file wrapper history in my opinion comes down to this: That in a battle for words the inventor never gave up his striggle for the invention but landed on language which latter the courts construed as being too broad to be limited to a rod operating to restrict and control the flow of water to the carbide. The file wrapper is not to be overlooked and is often highly important to prevent expansion or the effort to reclaim abandoned territory; but, as was pointed out by Judge Noyes in *Westinghouse v. Conduit Elec. Mfg. Co.*, 194 F. R., 427, at page 430, the bearing of the file wrapper on the language of the grant, is not to be exaggerated.

Concluding, therefore, that the reissue is valid, I think that there is not any substantial question of infringement. The Justrite lamp has a valve which simply adds something which may be a good feature but which in no way changes the function or differentiates the results of the combination of the patent.

Finally, it is urged that the Justrite Company should be relieved because of intervening rights which it has acquired.

It will be remembered that this company entered the field with its lamp at a time when the validity and scope of the Baldwin patent were still unquestioned and when after some five years of capable effort, the Baldwin lamp had created an extensive market. The Justrite Company took its chances and, in view of the necessities of the situation, it is relieved of all accountability for the period prior to the granting of the reissue patent; but when the reissue was granted the Justrite Company again took its chances.

By the reissuance of the patent, the patentee loses all in the way of an accounting under the original patent, but the dominant purpose of the reissue statute was to save to the inventor the future remaining after the reissue.

I see nothing in the course of plaintiffs or defendants which would allow a court of equity to conclude that defendants are to be relieved because of intervening rights.

Finally, I may say that in the light of the decision of the Circuit Court of Appeals in the *Bleser* case, the original specification turned

ut to be insufficient and Claim 4 turned out to be broader than
as originally supposed. The error thus made arose by reason of
that inadvertence against which the statute was designed to protect.

Motion Picture Patents Co. v. Laemmle, 204 F. R., 787.

It has happened that I have had occasion to examine a number
of reissue patents and no case has appealed to me more strongly
than the case at bar as one in which the inventor was justly entitled
to the reissue.

The plaintiffs may have the usual decree, but as it is desirable
not to create an embarrassing trade situation pending appeal, the
adjunction will be suspended pending appeal. If an appeal is not
promptly taken, plaintiffs may apply for a modification of the
suspension.

Settle decree on seven days' notice.

(Signed.)

JULIUS M. MAYER,

District Judge.

February 6, 1915.

92

Decree.

At a Stated Term of the United States District Court for the
Southern District of New York, held at the United States Court
House, and Post Office Building, Borough of Manhattan, New York,
on the 10th day of February, 1915.

Present—Hon. Julius M. Mayer, District Judge.

In Equity.

FREDERIC E. BALDWIN and JOHN SIMMONS COMPANY, Plaintiffs.
vs.

ABERCROMBIE & FITCH COMPANY and JUSTRITE MANUFACTURING
COMPANY, Defendants.

This cause came on to be heard at the January Term 1915, of
this Court, and was argued by counsel; and, thereupon, upon con-
sideration thereof, it was ordered, adjudged and decreed as fol-
lows, viz:

First. That Frederic E. Baldwin was the first, original and sole
inventor of the invention described in, and particularly recited in
claim 4 of United States Reissue Letters Patent No. 13,542, issued
March 11, 1913, for Acetylene Gas Generating Lamps.

93 Second. That said Reissue Letters Patent No. 13,542, are
as to Claim 4 thereof good and valid in law, and that the
title to said invention and Reissue Letters Patent is duly vested in the
plaintiffs, Frederic E. Baldwin and John Simmons Company, as
alleged in the bill of complaint.

Third. That the defendants, Abercrombie & Fitch Company and
Justrite Manufacturing Company, have infringed upon claim 4 of
said Reissue Letters Patent No. 13,542, by making, vending and

using lamps containing or embodying the invention of said Reissue Letters Patent No. 13,542.

Fourth. That the plaintiffs do recover of said defendants the profits which they have derived, received or made by reason of the afore-said infringement upon said claim 4 of said Reissue Letters Patent No. 13,542; and that said plaintiffs also recover of said defendants any and all damages they have sustained by reason of said infringement by said defendants; and it is hereby referred for the convenience of the parties, to Alfred W. Kiddle, Esq., as a Master of this Court, to make, state and report to this Court an account of such profits, and to ascertain and report thereto such damages, with all convenient speed; and that the said defendants, their and each of their confederates, associates, attorneys, solicitors, clerks, servants, agents and workmen, are hereby directed to attend before said Master, from time to time, as required by him and to produce before him such books, papers, documents and other proofs, as relate to the matter at issue, in such manner as said Master shall direct and to submit to such oral examination as the Master may require.

194 Fifth. That a perpetual injunction issue out of and under the seal of this Court directed to the said defendants, Abercrombie & Fitch Company, and Justrite Manufacturing Company, their and each of their confederates, associates, attorneys, solicitors, clerks, servants, agents and workmen, perpetually enjoining and restraining them, and each of them, from the manufacture, sale and use, in any manner of the lamps described in said Reissue Letters Patent No. 13,542, and particularly referred to in claim 4 thereof.

Sixth. That the plaintiffs recover of said defendants their costs and disbursements in this suit to be taxed.

Seventh. That the injunction granted herein is to be suspended pending appeal if appeal be promptly taken. If appeal be not taken within fifteen days from the entry of this decree, plaintiffs may apply, on five days' notice for a modification of the suspension of injunction herein provided.

JULIUS M. MAYER, *D. J.*

Approved as to form—

JAMES R. OFFIELD.

(Endorsed.)

Defendant's form of decree to limit recovery as against each defendant, etc., is premature and that point will be considered on the coming in of the Master's report if the decree is sustained.

JULIUS M. MAYER,
District Judge.

District Court, Filed Mar. 10, 1915. S. D. of N. Y.

195 *Petition for Appeal and Order Allowing Appeal.*

In the United States District Court, Southern District of New York.

In Equity. 10-219.

FREDERIC E. BALDWIN, and JOHN SIMMONS CO., Intervenor,
Complainants,
vs.

ABERCROMBIE & FITCH COMPANY and JUSTRITE MANUFACTURING
COMPANY, Intervener, Defendants.

To the Honorable the Judges of the District Court of the United
States, in and for the Southern District of New York:

The petition of Abercrombie & Fitch Company and Justrite Manu-
facturing Company, defendants herein, respectfully shows:

1st. That hereinbefore complainants filed their Bill of Complaint
against the defendants herein and that thereafter the defendants duly
answered, whereupon, proofs having been taken in open Court, this
cause came on to be heard on final hearing upon the pleadings and
proofs before the Honorable Julius M. Mayer, in the District Court
of the United States for the Southern District of New York, and that
on the 10th day of March, 1915, a decree for an injunction and ac-
counting was signed and entered herein in favor of complainants
and against the defendants.

196 2nd. Wherefore your petitioners, the defendants above
named, feeling aggrieved by the entry of said Decree, hereby
appeal therefrom to the United States Circuit Court of Appeals in
and for the Second Circuit for the reasons specified in the Assign-
ment of Errors filed herewith and pray that this appeal may be
allowed and that a duly authenticated transcript of said decree and
of the records and proceedings thereto relating upon which said
decree was made may be transmitted forthwith to the United States
Circuit Court of Appeals for the Second Circuit.

ABERCROMBIE & FITCH COMPANY and
JUSTRITE MANUFACTURING COMPANY,
By JAMES R. OFFIELD,
Solicitor for Defendants.

PHILIP B. ADAMS,
JAMES R. OFFIELD,
of Counsel for Defendants.

And Now, to wit, on the 23rd day of March, 1915, it is ordered
that the above appeal be allowed as prayed for.

J. W. MAYER,
District Judge.

[Endorsed:]

U. S. District Court—Filed Mar. 23, 1915—S. D. of N. Y.

Statement.

On March 23, 1915, a bond in the sum of \$250 for costs on appeal was duly approved and filed.

197

Assignment of Errors.

In the United States District Court, Southern District of New York.

In Equity. 10-219.

FREDERIC E. BALDWIN and JOHN SIMMONS Co., Intervenor, Complainants,

vs.

ABERCROMBIE & FITCH COMPANY and JUSTRITE MANUFACTURING COMPANY, Intervener, Defendants.

To the Honorable the Judges of the District Court of the United States, in and for the Southern District of New York:

And now comes the above named defendants, Abercrombie & Fitch Company and Justrite Manufacturing Company, by their solicitors, with their Petition for Appeal from the decree entered in this cause on the 10th day of March, 1915, and designated in said Petition for Appeal, and make and file the following Assignment of Errors:

The District Court erred in the following particulars:

1st. In holding that the plaintiff Frederic E. Baldwin was the first, original and sole inventor of the invention described in and particularly recited in Claim 4 of United States Reissue Letters Patent No. 13,542, issued March 11, 1913, for acetylene gas generating lamps.

198 2nd. In holding that Reissue Letters Patent No. 13,542 are, as to Claim 4 thereof, good and valid in law and that the plaintiffs, Frederic E. Baldwin and John Simmons Co., are the lawful owners of said invention and Reissue Letters Patent.

3rd. In holding that defendants, Abercrombie & Fitch Company and Justrite Manufacturing Company, have infringed upon Claim 4 of said Reissue Letters Patent No. 13,542, and upon the exclusive rights of the plaintiff under the same.

4th. In holding that Reissue Claim 4 can be extended to embrace subject-matter disclaimed and abandoned in original Claim 6.

5th. In holding defendants' construction to infringe.

6th. In not holding that the Justrite Company be relieved because of intervening rights which it had acquired.

7th. In holding that the original Letters Patent were insufficient and Claim 4 thereof to be broader than originally supposed and the error thus made arose by reason of that inadvertence against which the statute was designed to protect.

8th. In holding complainants entitled to recover of the defendants Abercrombie & Fitch Company and the Justrite Manufacturing Com-

pany, the profits which they or either of them have derived by reason of the alleged infringement of said Claim 4 of the Re-issue Letters Patent, and also any and all damages that complainants have sustained by reason of such infringement.

9th. In referring the case to a Master in Chancery.

10th. In enjoining the defendants, their officers, clerks, agents, servants and all claiming or holding under or through them, from the manufacture, sale and use, in any manner, of the lamps described in said Reissue Letters Patent No. 13,542, and particularly referred to in Claim 4 thereof.

11th. In holding that the injunction hereinbefore granted is to be suspended and not to be issued pending an appeal and that if such appeal be not taken within twenty days from the entry of this decree the plaintiffs may apply, on five days' notice, for a modification of the suspension of the injunction hereinbefore provided for.

Dated March 20th, 1915.

JAMES R. OFFIELD,
Solicitor for Defendants.

PHILIP B. ADAMS,
JAMES R. OFFIELD,
Of Counsel for Defendants.

[Endorsed:] U. S. District Court—Filed Mar. 23, 1915—S. D. of N. Y.

200

Citation.

To the Honorable Julius M. Mayer, one of the Judges of the District Court of the United States for the Southern District of New York, in the Second Circuit.

To Frederic E. Baldwin and John Simmons Co., Greeting:

You are hereby cited and admonished to be and appear before a United States Circuit Court of Appeals for the Second Circuit, to be holden at the Borough of Manhattan in the City of New York, in the District and Circuit above named, on the 21st day of April, 1915, pursuant to a petition filed in the Clerk's Office of the District Court of the United States for the Southern District of New York, wherein Abercrombie & Fitch Company and Justrite Manufacturing Company, are appellants, and you are respondents, to show cause, if any they be, why the prayer in said petition mentioned should not be corrected and speedy justice should not be done in that behalf.

Given under my hand at the Borough of Manhattan, in the City of New York, in the District and Circuit above named, this 23rd day of March, in the year of our Lord One Thousand Nine Hundred and Fifteen, and of the Independence of the United States the One Hundred and Thirty-ninth.

J. W. MAYER,
*Judge of the District Court of the United States for
the Southern District of New York, in the Second Circuit.*

[Endorsed:] U. S. District Court—Filed Mar. 24, 1915—S. D. of N. Y.

201

Stipulation Concerning Record.

United States District Court, Southern District of New York.

In Equity. 10-219.

FREDERIC E. BALDWIN and JOHN SIMMONS COMPANY,
vs.ABERCROMBIE & FITCH COMPANY and JUSTRITE MANUFACTURING
COMPANY.

It is hereby stipulated and agreed by and between solicitors for the respective parties hereto that the record on appeal herein shall consist of the complainants' and defendants' testimony as used in the District Court, the pleadings, the opinion of the Court, the appeal papers and the paper exhibits; the provision of Equity Rule 75 being dispensed with.

PHILIPP, SAWYER, RICE & KENNEDY,
Solicitors for Complainants.

JAMES R. OFFIELD,
Solicitor for Defendants.

So ordered March 23, 1915.

J. W. MAYER, D. J.

[Endorsed:] U. S. District Court—Filed Mar. 23, 1915—S. D. of
N. Y.

202

Stipulation Concerning Exhibits.

United States District Court, Southern District of New York.

In Equity. 10-219.

FREDERIC E. BALDWIN and JOHN SIMMONS COMPANY, Plaintiffs,
vs.ABERCROMBIE & FITCH COMPANY and JUSTRITE MANUFACTURING
Company, Defendants.

It is hereby stipulated and agreed by and between the attorney for the respective parties hereto, that the following exhibits of both parties need not be printed in the record, but with the approval of the Court, be taken up to the United States Circuit Court of Appeals as physical exhibits:

Complainants' Exhibits.

2—Defendants' Lamp.

4—Plaintiffs' Lamp.

6—Grier Lamp.

- 7—Mining and Engineering Publication.
- 9—Drawing Plaintiffs' Commercial Lamp.
- 10—Proctor Flow Diagram.
- 11—Illustrative Plug.
- 12—Illustrative Valve Opening (Diagram).
- 14—First Justrite Lamp.
- 203 15—Lamp Schmidt Type.
- 18 to 23—Lamps in use in 1910-1911.
- 24—Baldwin Valve Lamp.

Defendants' Exhibits.

- A—Prior Art Patents.
- B—Half Section of Lamp.
- E—File Wrapper Re-Issue Patent 13,542.
- F—Hansen Model of Schmidt Lamp.

Dated New York, April 15th, 1915.

PHILIPP, SAWYER, RICE & KENNEDY,
Solicitors for Complainants.
 JAMES R. OFFIELD,
Solicitor for Defendants.

So Ordered:
 LEARNED HAND, D. J.

204 *Stipulation Waiving Certification.*

United States District Court, Southern District of New York.

Equity. 10-219.

FREDERIC E. BALDWIN and JOHN SIMMONS COMPANY, Complain-
 ants-Appellees,
 vs.
 ABERCROMBIE & FITCH COMPANY and JUSTRITE MANUFACTURING
 COMPANY, Defendants-Appellants.

It is hereby stipulated and agreed, that the foregoing is a true transcript of the record of the said District Court in the above-entitled matter as agreed on by the parties.

Dated, New York, April 21st, 1915.

PHILIP, SAWYER, RICE & KENNEDY,
Attorneys for Complainants-Appellees.
 JAMES S. OFFIELD,
Attorney for Defendants-Appellants.

205 & 206

Plaintiff's Certificate.

UNITED STATES OF AMERICA,
Southern District of New York, ss:

FREDERIC E. BALDWIN and JOHN SIMMONS COMPANY, Complain-
 ants-Appellees,

vs.

ABERCROMBIE & FITCH COMPANY and JUSTRITE MANUFACTURING
 COMPANY, Defendants-Appellants.

I, Alexander Gilchrist, Jr., Clerk of the District Court of the United States of America for the Southern District of New York, do hereby certify that the foregoing is a correct transcript of the record of the said District Court in the above-entitled matter as agreed on by the parties.

In Testimony Whereof, I have caused the seal of the said Court to be hereunto affixed, at the City of New York, in the Southern District of New York, this 21st day of April, in the year of our Lord one thousand nine hundred and fifteen, and of the Independence of the said United States, the one hundred and thirty-ninth.

ALEX. GILCHRIST, JR., *Clerk.*

208

United States Patent Office.

Frederic E. Baldwin, of New York, N. Y.

Acetylene-Gas-Generating Lamp.

Specification of Reissued Letters Patent.

13,542.

Reissued Mar. 11, 1913.

Original No. 821,580, dated May 22, 1906, Serial No. 165,587. Ap-
 plication for Reissue Filed February 5, 1913. Serial No. 746,396.

To all whom it may concern:

Be it known that I, Frederic E. Baldwin, a citizen of the United States, residing in New York, county of Richmond, and State of New York, have invented certain new and useful Improvements in Acetylene-Gas-Generating Lamps, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

(Here follows diagram marked page 207.)

207
 # 323
 Abecrombie
 Fitch & Co.
 Baldwin } \$ 2.00

F. E. BALDWIN.

ACETYLENE GAS GENERATING LAMP.

APPLICATION FILED FEB. 9, 1913.

Reissued Mar. 11, 1913.

13,542.

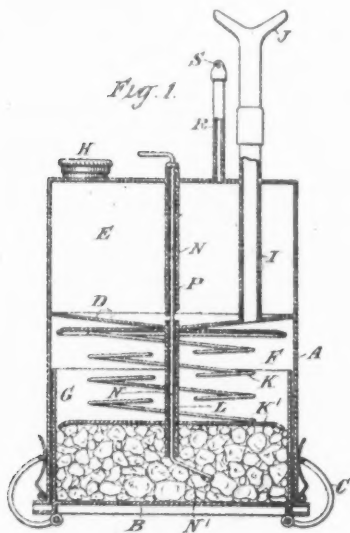


Fig. 1.

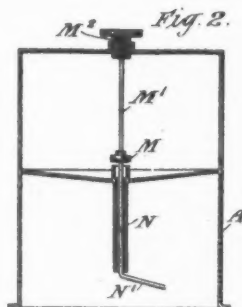
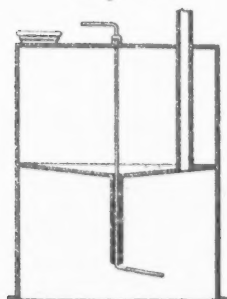


Fig. 2.

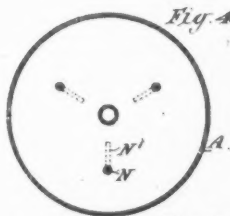


Fig. 4.

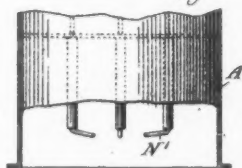


Fig. 5.

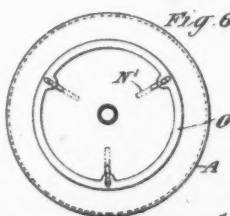


Fig. 6.

Witnesses:
 A. White
 J. P. Donnan

Inventor:
 Frederic E. Baldwin
 By his atty.
 Philip H. Sawyer, Rm. 11, Broadway



The invention upon which is based the present application for Letters Patent is a lamp designed to generate and burn acetylene or similar gas, and is an improvement on the form described and shown in a patent granted me August 28, 1900, No. 656,874. Like the lamps of said patent, that of the present application is intended for use and adapted to use as a bicycle, automobile, yacht, or miner's lamp, or for any other analogous purpose, it being necessary only to change its form or dimensions to adapt it to any one of the purposes mentioned.

In the drawings hereto annexed, Figure 1 is a central vertical section of the complete lamp. Fig. 2 is a similar view of a portion of the lamp exhibiting a modification. Fig. 3 is a similar view of a further modification. Figs. 4, 5, and 6 are details of parts of the lamp, showing another modification.

The features of novelty which characterize my present invention reside in details of construction and will be pointed out in the course of the following description of the devices illustrated in the drawings and the manner of using the same, and more particularly specified in the subjoined claims.

Generally considered, the lamp is one comprising a metallic or other receptacle A, preferably provided with a bottom B, which may be readily detached and which when the lamp is in use is held firmly in position by suitable clamps C, so as to make a water and gas tight closure.

The receptacle is divided, preferably horizontally, by a partition D into two compartments, the upper one, E, designed to serve as a water-chamber or reservoir, the lower, F, as a gas-generating chamber adapted to contain a receptacle G for calcium carbid, which is generally attached to or forms the detachable bottom.

In the top of the lamp is an orifice closed by a screw cap H or similar device for the introduction of water to the reservoir, and from the gas-generating chamber F through the water-reservoir E and out through the top of the lamp extends a tube I, which conducts the gas to the burner J.

I proceed now to a detailed description of the features enumerated below, which I have devised as improvements in lamps of the general character above described.

The means for effecting and controlling the generation of gas.—A quantity of calcium carbid, preferably in a finely divided condition, is placed in the receptacle G and retained by any suitable device, such as a spiral spring K, interposed between the bottom of the water reservoir E and a loosely fitting or perforated plate K', care being taken to adjust the tension of the spring so that the proper degree of pressure will be exerted upon the mass of carbid. A tube L leads from the water-reservoir down into the receptacle G and forms a duct which introduces the water into the body of carbid which said receptacle is designed to contain.

Various means have been employed to regulate or control the normal rate of flow of water through a water-supply tube. For example, the bore of the tube has been made of small diameter; but this plan has not been found practical for various reasons. In the

first place, the discharge outlet thereof is under pressure of several inches of water, and it is practically impossible to make the bore so minute that the water will issue in sufficiently small quantity. If the attempt is made to secure this small flow by making the tube very minute, it then becomes so easily clogged that the operation of the lamp is rendered extremely uncertain. The smallest particle of foreign matter in the water or a bit of slaked carbid carried into the bore by back pressure of the gas will stop the flow completely, and the lamp will go out. Such a tube is also difficult, in fact, almost impossible, to clean. Another method which has been employed is to use a duct of comparatively large bore and fill the same with a wick of more or less loose texture for the purpose of checking the supply. This for a time operates with some degree of success, though from the very nature of the material used the precise amount of the feed can never be exactly determined. A valve is generally necessary to regulate the supply. Furthermore, when the lamp has been used for a time the wick, which of course must act as a strainer, becomes filled with solid matter—such as sand, dirt, and organic particles contained in the water—so that the feed is reduced. This necessitates frequent adjustment of the valve to restore the proper supply. In time the wick becomes completely choked, and the user, often unskilful in such matters, must tamper with the lamp and insert a new wick, which is at best a troublesome procedure. Again, if the lamp has not been used for some time the wick dries out, and a very appreciable time is required to soak it up so that the water will again flow through.

The method which I have invented for securing the proper feed under all circumstances without the above objectionable features is to make the bore of the duct of comparatively large size, extend the tube which forms the duct downward so that its end will be always embedded in the carbid, and then restrict the duct by means of a wire or rod preferably centrally located therein to leave a channel of the proper size. This arrangement is simple; but in a long experience it has been found to be entirely successful. It is possible to secure the correct drop-by-drop feed with a duct of considerable size since the friction of the water on the large area of the tube-wall and wire reduces its flow. This retarding-friction may be regulated by varying the size of wire used. The duct does not become choked since if foreign particles are deposited therein the water can take a zigzag course around it without the supply being appreciably affected. If it is at any time necessary to clean the tube, the wire is simply reciprocated and rotated a few times from the outside of the lamp without disturbing the position of other parts. This nice regulation of the flow enables me to entirely dispense with the troublesome adjustment of the valve. If a valve is used at all, it is employed to shut off the flow entirely and not to regulate it. The construction just described is shown in Fig. 1, in which L is the water-supply tube and N the constricting wire. In this illustration the size of the parts is of course exaggerated. Fig. 2 shows a similar construction with a valve M on the constricting-wire M' which may be set by turning the screw-plug M² in the top of the lamp. In some cases

however, there is employed in connection with the means for introducing the water into the mass of carbid a device in the nature of a stirrer, which on proper manipulation may be used to break up the mass of carbid surrounding the outlet of the water duct and which by having become slaked and caked by the action of water prevents the proper percolation of the latter to the unslaked carbid in the receptacle G, Fig. 1. As such device I employ a stem or rod N, which extends down through the tube L and is bent at substantially right angles to form an arm N'. This rod may form a prolongation of the valve-stem M' of Fig. 2 or in case no valve is used may extend from the top of the lamp down through the water-reservoir, as shown in Fig. 3. It will be understood from what has been said that the function of the stirrer is to break up, pierce or disturb the particles of the slaked carbid mass which, when the lamp is in use, forms of the delivery end of the tube. This slaked carbid mass tends to solidify and either shuts the water off altogether or restricts it so that less water is delivered from the water tube than the lamp demands for efficient operation. As it is sufficient, under certain circumstances, to insure the requisite water flow by so manipulating the stirrer, as to pierce, break up, or loosen the slaked carbid mass immediately around or at the mouth of the tube, it is obvious that the stirrer need not always be formed with a bent end or so as to extend radially from the mouth of the tube.

As calcium carbid possesses strongly absorptive properties, the introduction of water through the tube L will result in the gradual slaking of the material about its outlet; but the lime thus produced becomes gradually less permeable to the water, so that an insufficient quantity of gas is generated to maintain the proper flame. When this becomes noticeable, the rod N is turned so as to cause the arm N' to break up to a greater or less extent the mass of lime, and in practice I have found that under ordinary conditions this is amply sufficient to insure a substantially uniform generation of gas until all of the carbid in the receptacle G is exhausted.

In the larger-sized lamps it is desirable to employ two or more water-tubes L and, if desired, stirring-rods N, extending down to different points in the carbid-receptacle. This is indicated in Fig. 4, which is an under plan view of the bottom D of the water-reservoir, showing three water-tubes L in section. It is, however, desirable when a plurality of stirring rods are employed that some means be provided for actuating all of them simultaneously. A device suitable for this purpose is shown in Fig. 6, in which O is a ring placed on top of the lamp, with which bent ends of all the rods N engage, so that a partial rotation of the ring will impart a corresponding movement to each rod.

The means for consuming an excess of gas.—Although the means described above effect a remarkably uniform generation of gas, it sometimes occurs that an amount of gas in excess of that required for the burner is temporarily produced, and the usual plan is to provide some channel for its escape into the air. When the lamps
210 are used in confined places, however, this method of disposing of the unconsumed gas is objectionable, owing to its very

disagreeable odor. To remedy this, I provide a channel of escape, which terminates in the immediate vicinity of the burner proper, so that any excess of gas which may issue will be ignited by the flame of the burner and consumed. This may be accomplished in various ways; but the most practical of which I am at present aware is that shown in Fig. 1. In this figure there is shown a tube P, which extends downward from the top of the lamp to a point near the orifice of the water-tube L in the lower part of the water-reservoir E. The rod N extends through this tube without leaving sufficient space for passage of escaping gas. The air to replace the water which flows into the carbid-chamber enters through the burner and tube hereinafter described. When more gas is generated than is carried off by the burner tube, it forces the water up through the tube L and enters the water-reservoir. Practically none of the gas will find its way up the tube P under any circumstances, but rising to the upper part of the reservoir E it escapes through a tube R, provided with a vent S of such character as to constitute a burner and in such close proximity to the main burner J that any gas issuing through it will be ignited by the flame of the latter and burned.

The specific construction of the various parts of my lamp may be, as will be seen from a consideration of the nature of the improvements, very greatly varied without departing from the invention.

What I claim is:—

1. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a tube extending from the former a considerable distance into the latter so as to be embedded in the mass of carbid contained in said receptacle, and a rod or stem extending through said tube into the carbid-receptacle and having its end formed as a stirrer to break up the slaked carbid around the outlet of the water-tube, as set forth.

2. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a tube extending from the former into the latter so as to be embedded in the mass of carbid contained in the receptacle, a rod extending from a point outside of the lamp through the tube and into the carbid-chamber and having its end bent to form a stirrer for breaking up the slaked carbid around the outlet of the water-tube, as set forth.

3. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a plurality of tubes extending from the former into the latter so as to be embedded in the mass of carbid contained in the receptacle, a stirrer passing through each tube adapted to break up the slaked carbid around the end of the tube, and means for actuating all the stirrers simultaneously, as set forth.

4. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water-tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water-tube, and constituting a stirrer to break up slaked carbid around the outlet of the water tube, the

rod operating to restrict and thus control the flow of water to the carbide, as set forth.

5. In a lamp of the kind described, the combination with a water-reservoir, a carbide-receptacle, and a tube restricted by a wire extending into the carbide-receptacle from outside the lamp and open to the water-reservoir, a tube exterior to the lamp, connected with the reservoir and adjacent to the main burner, and equipped with a burner, said auxiliary burner acting as an air-vent to admit air during the normal operation of the lamp.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FREDERIC E. BALDWIN.

Witnesses:

AUGUSTA WHITE.

JAMES Q. RICE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

211

COMPLAINANT'S EXHIBIT No. 3.

United States District Court, Southern District of New York.

In Equity. E-10-219.

FREDERIC E. BALDWIN and JOHN SIMMONS COMPANY, Plaintiffs,

vs.

ABERCROMBIE & FITCH COMPANY and JUSTRITE MANUFACTURING COMPANY, Defendants.

It is hereby stipulated in the above entitled cause as follows.

(1) That the official printed copy of the specification and drawings of any United States Patent or of any foreign patent may be used in evidence, with the same force and effect as the original patent, or as a duly certified copy thereof; subject, however, to correction by the original or such duly certified copy, if error appear.

(2) That the dates of publication of specifications, and of sealing, of British patents as shown in the British "Illustrated Official Journal" (Patents), or its predecessors, the British "Official Journal of the Patent Office," and "The Commissioner of Patents' Journal" shall be taken as proof of said dates, and the testimony of a competent witness who has examined the same shall be deemed competent evidence as to the facts these publications show.

212 (3) That the date of filing the application for any patent, and each other date concerning said patent, appearing upon the official printed copy of the specification and drawings thereof, shall be taken as proof of such date, subject to correction if error appear.

(4) That the parties complainants and defendants are as alleged in the pleadings herein.

(5) That complainants' lamps have been marked as alleged in the bill of complaint.

(6) That the defendants prior to the filing of the bill of complaint and amended bill of complaint herein and as alleged therein made or caused to be made, and sold or caused to be sold, the lamp annexed hereto and made a part hereof marked "Complainants' Exhibit Defendants' Lamp."

PHILIPP, SAWYER, RICE & KENNEDY,
Solicitors for Complainants.
WILLIAM M. CHADBOURNE,
Solicitor for Defendants.

213

COMPLAINANTS' EXHIBIT No. 5.

In the District Court of the United States for the Western District of Pennsylvania.

In Equity. No. 26, Oct. Term, 1913.

FREDERIC E. BALDWIN and JOHN SIMMONS Co., Plaintiffs,
vs.
GRIER BROTHERS COMPANY, Defendant.

ORR, J.

The plaintiffs by their bill charge the defendant with infringement of Reissue Patent of the United States, No. 13,542, issued to Frederic E. Baldwin for an acetylene gas generating lamp under date of March 11, 1913, and have also charged the defendant with unfair competition in trade in marketing an unfair copy of a portable miner's acetylene lamp known as the "Baldwin" lamp.

The defendant has denied the validity of the patent upon the ground, as it is alleged in the answer, that the said Reissue Patent and the original patent No. 821,580, were fully anticipated in the prior art, and defendant denies that it has been at all unfair in its competition with the plaintiff in marketing a portable miner's acetylene lamp manufactured by it.

Taking up first the question of unfair competition, the court has reached the conclusion that the facts and law are with the plaintiff. This branch of the case was before the late Judge Young upon a motion for a preliminary injunction, which motion was sustained in an opinion filed by him on January 3rd, 1914. That the conclusions reached by that learned Judge were correct appears clearly from the evidence produced at the trial. Sometime prior to January 21, 1906, on which date there appeared in the Engineering & Mining Journal a description of the Baldwin lamp, the plaintiff, Frederic E. Baldwin, began to put out a miner's acetylene cap lamp substantially like the lamp of the plaintiffs. At or about that time he entered into business relations with the other plaintiff, whereby the latter acquired the sole right to manufacture the said lamp in consideration of a

royalty upon each lamp paid and to be paid to the former. There was difficulty in introducing the lamp to the intended users. Miners were not familiar with acetylene and had to be taught its uses. Miners supply stores did not carry calcium carbide. The carbide on the market was usually in lumps too large for use in a cap lamp, and in some states mining inspectors would not permit the use of acetylene lamps in the mines. These difficulties, however, appear to have been largely if not wholly overcome in mines where safety lamps are not required and the plaintiffs have sold the Baldwin lamp to the number of 900,000 or thereabouts. The Baldwin lamp was packed in a paste-board box with an extra carbide container to be substituted for the container on the lamp when the carbide therein would be exhausted, and equipped also with a wire for the purpose of cleaning the small opening of the gas burner, which wire

215 was attached to a flat piece of metal of singular shape with a hole through it which could be hung upon any one of certain metal hooks or braces with which the lamp was equipped and intended to be used for suspending and steadying the lamp against the cap. In the box with the lamp and the extra carbide container and the cleanser was a circular containing printed instructions to users in four or five different languages. Sometime in the early part or in the middle of the year 1913, the defendant began the manufacture and sale of its lamp called herein the "Grier" lamp. That lamp was designed to imitate the Baldwin lamp. This conclusion cannot be resisted from a careful consideration of the testimony and the exhibits. It is similar in design. It was packed in a similar box. It contained the extra carbide container. It contained the cleanser, even with a piece of metal attached thereto, with a hole in it, and it contained an almost verbatim copy of the circular which accompanied the Baldwin lamps. It is a fact that the box containing the Grier lamp has not the same printing upon it the Baldwin box had, and it is true that there appears stamped in the brass which forms part of the top of the Grier lamp the name "Grier Brothers, Pittsburgh, Pa.", with a star, yet such stamping is on the same part of the lamp as the stamping of the Baldwin lamp. These variations are not sufficient to relieve the defendant from the charge of unfair competition. The defendant also has attached to the reflector of its lamp a small apparatus called a sparker, which will throw a spark and light the lamp. But this sparker is a removable adjunct to the lamp and does not give sufficient identity to the

216 defendant's lamp to avoid deception. Defendant says that its lamp is sold not because of its imitation of the Baldwin lamp, but because of the addition of the sparker. The fact is found to be that the sparker, while it may be a factor in inducing the purchase of the Grier lamp, yet it is not the chief cause. It is the general similarity of the Grier lamp to the Baldwin lamp, in connection with a knowledge of an experience with the Baldwin lamp prior to the introduction of the Grier lamp, that it is the factor in making the sales of the defendant's product. Defendant insists that the reasons for the similarity of appearance are inherent in the nature of the article, or in the necessary, convenient or me-

chanical methods and processes of manufacture. I cannot so find the fact to be. The mere facts that a miner's lamp must be light enough to be carried upon the cap of the miner; that it must be short enough to escape the roof of the mine; that brass is a light material and resists the action of the mine waters; that a reflector will more easily fit in against the side of an inverted cone than against some other shape, are not sufficient to destroy the plaintiff's rights to the fruits of their labor, in the introduction of their lamp.

Defendant offered the record of a suit instituted by the said Baldwin against one Jacob Bleser in the Circuit Court of the United States for the Southern District of Illinois, wherein the question of unfair competition, as well as the validity of patent No. 821,580, were both involved, and in which there was a decision that the defendant Bleser had not been guilty of unfair competition, and defendant offered evidence of the similarity of Bleser's lamp with the lamp of the plaintiffs in the case at bar. This case will be referred to later in the consideration of the question of in-

217 fringment. As the court regards it, however, it has no bearing upon the question of unfair competition in the case at bar. Even if Bleser was not guilty of unfair competition and even if his acts were the same as those of the defendant in the case at bar, yet Bleser's release from liability would not afford protection to the defendant here. However, it does not appear that Bleser was guilty of the same acts of which the defendant has been shown to be guilty in this case. The charge of unfair competition in that case, although raised, may not have been sufficiently pressed. In every aspect of the case at bar, after a careful consideration of the evidence and arguments, the court finds as a fact that the defendant has been and is guilty of unfair competition and should be restrained by injunction.

The other questions in the case are not without difficulty. There is nothing new in the use of acetylene gas as an illuminant in portable or stationary burners. As is well known, it is a gas liberated by the addition of water and calcium carbide. The difficulty in the art has always been to regulate the flow of water to the carbide so that there will not be a greater amount of gas liberated by the chemical action than is required for use. In portable lamps especially it is evident that there must be due consideration given to the weight of the lamp with its contents and as well some proper relation between the amount of water and carbide to insure a flame sufficiently long to make the lamp of practical use. In a miner's lamp especially, because it is attached to the cap of the miner, especial consideration must be given to its size and weight. From the foregoing, it is

218 apparent, without reference to the prior art, that there must be in every portable lamp, a water chamber, a carbide container, and a means for controlling the flow of water from the former to the latter, just as surely as there must be the generation of gas and the flame. The greatest difficulty in the art, so far as appears in the record of this case, has been to regulate the flow of water. Such regulation appears to have been most successfully accomplished by means of a tube through which the water flows in

connection with which, or adjacent to an end of which, some means have been adopted for restraining the flow. This regulation has usually been accomplished by means of a valve which could be pressed against an end of the tube. This appears in United States patent to Handshy, No. 591,132, wherein the valve closes the tube automatically as the pressure of the gas beneath the water retort raised the diaphragm separating the two, thereby cutting off the flow of water until the use of the gas in the retort so diminished the pressure as to permit the diaphragm to fall and allow more water to enter the carbide. In some patents the valve was operated by hand so that as the flame increased too much the operator would seat the valve in the opening in the tube, thereby shutting off the water until the flame had become reduced, and when the flame became too low the valve could be slightly lifted from its seat and water allowed to flow through the tube into the carbide. This is seen in United States patent to Frederic E. Baldwin, No. 656,874, dated August 28, 1900. In most of the prior patents a wire or rod extended through the tube and upon this rod the valve was fastened. This rod in many of the lamps of the prior art was capable of being moved up and down and as well in some cases rotated for the purpose of removing from the tube articles that might have passed therein from the water or the small particles of slaked carbide that might have gotten into the tube in the generation of gas.

The plaintiff, Frederic E. Baldwin, on the 15th day of July, 1903, applied for a patent for an acetylene gas generating lamp and was awarded one by the United States of May 22, 1906, the same being numbered 821,580. It is the reissue of this patent that is in suit. In the original patent the inventor, after reciting the difficulties of regulating the flow of water and the methods adopted in the prior art, states his method to be as follows:

"The method which I have invented for securing the proper feed under all circumstances without the above objectionable features is to make the bore of the duct of comparatively large size and then restrict it by means of a wire or rod preferably centrally located therein to leave a channel of the proper size. This arrangement is simple; but in a long experience it has been found to be entirely successful. It is possible to secure the correct drop-by-drop feed with a duct of considerable size, since the friction of the water on the large area of the tube-wall and wire reduces its flow. This retarding-friction may be regulated by varying the size of wire used. The duct does not become choked, since if foreign particles are deposited therein the water can take a zigzag course around it without the supply being appreciably affected. If it is at any time necessary to clean the tube, the wire is simply reciprocated and rotated a few times from the outside of the lamp without disturbing the position of other parts. This nice regulation of the flow enables me to entirely dispense with the troublesome adjustment of the valve. If a valve is used at all, it is employed to shut off the flow entirely and not to regulate it."

The special feature set forth in that quotation from the specifica-

tions is not made prominent in any of the claims of the patent. As we propose to deal entirely with the fourth claim of the patent in suit, the fourth claim of the original patent is set forth as follows:

"4. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water-tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water-tube and constituting a stirrer to break up slaked caroid around the outlet of the water-tube, as set forth."

The words "as set forth," at the close of that claim would seem to be a reference to the special feature in the specifications as disclosed. This special feature does not appear to have been fully considered in the case of *Bleser v. Baldwin*, 199 Fed. Rep., 133, wherein there was an adjudication adverse to the plaintiff as to claim 4 of patent No. 21,580. That case, so far as claim 4 is concerned, seems to have dealt principally with the rod as a stirrer and not as a factor in creating retarding friction in the water tube. The patent to Bleser, as found by the Court in that case, "calls for a needle fitting loosely into the tube and other hollow parts of which
221 it constitutes the core. Its function is to clean the tube 4 and remove any obstruction from the end thereof." After the decision in *Bleser v. Baldwin*, supra, the plaintiff Baldwin applied for a reissue of his patent No. 821,580. He changed that portion of his specifications which has been above quoted by adding the underscored words in the following quotation:

"The method which I have invented for securing the proper feed under all circumstances without the above objectionable features is to make the bore of the duct of comparatively large size, *extend the tube which forms the duct downward so that its end will be always embedded in the carbid*, and then restrict the duct by means of a wire or rod preferably centrally located therein to leave a channel of the proper size. This arrangement is simple; but in a long experience it has been found to be entirely successful. It is possible to secure the correct drop-by-drop feed with a duct of considerable size, since the friction of the water on the large area of the tube-wall and wire reduces its flow. This retarding-friction may be regulated by varying the size of the wire used. The duct does not become choked, since if foreign particles are deposited therein the water can take a zigzag course around it without the supply being appreciably affected. If it is at any time necessary to clean the tube, the wire is simply reciprocated and rotated a few times from the outside of the lamp distributing the position of other parts. This *vice* regulation of the flow enables me to entirely dispense with the troublesome adjustment of the valve. If a valve is used at
222 all, it is employed to shut off the flow entirely and not to regulate it."

He also inserted the following in the specifications:

"It will be understood from what has been said that the function of the stirrer is to break up, pierce or disturb the particles of the slaked carbid mass which, when the lamp is in use, forms at the delivery end of the tube. This slaked carbid mass tends to solidify

and either shuts the water off altogether or restricts it so that less water is delivered from water tube than the lamp demands for efficient operation. As it is sufficient under certain circumstances, to insure the requisite water flow by so manipulating the stirrer, as to pierce, break up, or loosen the slaked carbid mass immediately around or at the mouth of the tube, it is obvious that the stirrer need not always be formed with a bent end or so as to extend radially from the mouth of the tube."

He also rewrote claim 4 by adding the words underscored in the following reprint:

"4. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water-tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water-tube, and constituting a stirrer to break up slaked carbid around the outlet of the water tube, the rod operating to restrict and thus control the flow of water to the carbid, as set forth."

Thus it will be seen that what this court believes to have been the special feature of the original patent is more clearly and definitely set forth in the reissue. It is made plain that the tube must be of such length as to be always embedded in the carbid and that the rod extending through the same must be such as would operate to restrict and control the flow of water. The large sized area of the tube and as well the length of the tube in relation to the rod placed therein has the effect of increasing the friction of the water and thereby retarding its flow. There is no suggestion in any of the prior patents that the flow of water may be regulated in this way. All the other elements of the fourth claim are old, but the combination of such old elements with the rod of a proper size for the restriction and control of the flow of the water is new. That it was useful appears from the extended use to which it has been and is being put. Plaintiffs are therefore entitled to be protected because the patent discloses invention.

But it is said that the plaintiff Baldwin was not entitled to the reissue because the claim is broadened and not narrowed. Claim 4 of the original patent was an exceedingly broad claim when read without reference to the special feature of the specifications found in the excerpts above quoted. The rod called for by the claim might have been any kind of a rod, provided it extended through the water tube and could be used to break up slaked carbid around the edge of the tube. In the claim of the reissue patent it cannot be any kind of a rod, but is limited to a rod of such size with respect to the tube that it will restrict and control the flow of water through the same.

The defendant has invoked the doctrine of intervening rights as a defense to the suit upon the reissue. The final decision of the Bleser case appears to have been entered April 23rd, 1912. The application for reissue was filed February 5, 1913. As above stated, claim 4 of the patent was narrowed by the reissue. The reissue in the light of the Bleser case was perhaps reasonably necessary and proper. The

court is unable to find from the testimony that there were any intervening rights. The reissue, therefore, in so far as claim 4 is concerned, is valid. Because the lamp of the defendant possesses all the elements found in claim 4 and especially because it has a water-tube extending a considerable distance into the calcium carbid and adapted to be embedded in the mass of carbid, and a rod extending through the water tube, not only constitutes a means of breaking up slaked carbid around the outlet of the tube, but operating to restrict and control the flow of water to the carbid, the defendant has infringed plaintiffs' rights under the patent and an injunction should issue to restrain further infringement thereof.

In thus disposing of this case, the court has limited itself to a consideration of the principal questions without going into details which are readily found from a large mass of testimony and numerous exhibits. Further elaboration seems wholly unnecessary.

Let a decree be presented in accordance with this opinion.

(Here follows diagram marked page 225.)

HOW TO USE THE "BALDWIN" CARBIDE PIT LAMP

Slovak—

Hungarian—

1. Fill the bottom of the lamp half full of carbide. Too much may stop the passage of the gas. This charge will last 2½ hours.

2. Screw the bottom tightly onto the lamp to prevent loss of gas.

3. A little grease on the threads of the screws will make the lamp last longer.

4. When you fill or empty the lamp, do not damage the thread of the screw by striking it against the rocks. When the screws are spoiled the gas will escape.

5. To light the lamp, open the water cover and fill it three-quarters full of water. Do not allow the burner to get wet as it may close.

6. As soon as the water reaches the carbide, it makes gas and is ready to light.

7. If the flame gets low, it means that the carbide does not receive sufficient water. Turn the wick which is on the top of the lamp around a few times. You need not touch the wick if the flame is too small.

8. To clean the burner, use the burner cleaner which is sent with each lamp.

9. If the raking wire is pulled out while the lamp is lighted, pour out the water and put back the wire.

10. Keep your lamp clean and you will find it very serviceable and will last much longer. Occasionally remove the felt and clean it, or put in a new piece. The felt filters the gas and produces a better light and keeps the burner clean.

11. This lamp is perfectly safe and can be operated by a boy—upsetting it does no harm. Should the lamp catch fire around the joint from being improperly screwed together, blow out the flame and tighten up on the screw. Keep the top of the retainer and rubber gasket free from dirt, else the gas will escape.

12. The extra bottoms are intended, when filled with carbide, to be carried in the pocket. When the charge in the lamp is exhausted, the fresh one is placed in the lamp and the cover placed on the exhausted charge, thus keeping the pocket clean. When through for day clean containers and dry.

Keep the carbide in the containers until you leave the mines or, if your rules permit, empty it into the Coal Cars.

Do not throw the used carbide on the ground in the mines, not that it is dangerous, but because when it is first thrown out the odor is disagreeable. The little gas that may be left in it cannot cause trouble of any kind.

In most mines the men throw the used carbide into the coal cars so that it is removed from the mines without any trouble or expense.

If the water does not feed fast enough due either to the raking wire No. 2 being slightly oversized or the use of dirty water, the wire should be removed from the lamp and cleaned or scraped with sandpaper or a suitable knife.

The burner, rubber gaskets and felts for Baldwin Lamps are the best that can be made and are guaranteed. We replace all inferior parts that are defective.

When you buy inferior parts, insist on getting the genuine—they do not cost you any more and you are sure to get the best quality.

An imitation is never equal to the original.

AKC UŽIVAT "BALDWIN" CARBIDE PIT LAMP

1. Naplnite spodok lampy do polovičky s karbidom. Ak dáte priveľa, môže sa zastaviť plyn. Toto potrvá 2½ hodín.

2. Dobro prišrubujte spodok lampy, aby nevychádzal plyn.

3. Trochu masla na šruboch bude mať účinnok, že lampu bude dlhšie.

4. Keď naplníte alebo vyprázdňujete lampu, dajte pozor, aby ste nepokazili šrubu uderením do skaly. Ak šrubá sú pokazené, plyn utekne.

5. Ak chcete zapáliť lampu, otvoríte pokrývadlo nad vodou a nalejete tri časti vody. Dajte pozor, aby voda pri plamni nebola mokrá, lebo sa môže zapchať.

6. Akonáhle voda sa spojí s karbidom, utvorí sa plyn a je hotové svetlo.

7. Keď svetlo je slabé, je to znakom, že karbid nemá dost vody. Obráťte pár ráz drôt, ktorý je na vrchu lampy. Nenušite sa dotknúť drôtu, iba keď plameň je príslabý.

8. Na čistenie plameňovej rúry, užívajte "burner cleaner", ktorý sa zasiela s každou lampou.

9. Jestli podelný drôt sa vyfahne, keď lampu je zapálená, vylejte vodu a potom dajte nazad drôt.

10. Drôte vody lampu čistú a presuďte si, že vody bude v dobrom stave a potrvá dlho. Od času do času berte dolu plstenú látku a vyčistite ju, alebo dajte nový kus. Plstená látka čistí gas a dáva lepší svetlo a tiež je príčinou, že plameňová rúrka je čistá.

11. Táto lampu je úplne bezpečná a môže ju použiť chlapec. Ak sa vyvráti, nezaškodí nič. Ak lampu chyti oheň, preto, že není dobre prišrubovaná, vyhasíte plameň, a zašrubujete dobre. Odstráňte nečistotu od vrchu a gumy, ináč gas sa utráti.

12. Zbytočné grombiky drôte v kapsi. Naplnené karbidom. Ak sa vrúžite karbid v lampe, dajte novú a na staré dajte pokrývadlo, aby keňa bola čistá. Po práci, očistite a vy-sušte lampu.

Zadržte troskovy Karbid v nádobach, kim ne-dete von s baňach alebo vyplite ho do uhľových kočach.

Né vyhadzte ušivany Karbid po zemé v baňe, né že by nebezpečno bolo, ale zato že keď sa vyhodí od začiatku na neprijemny von. To malo plyni čo ešte mohlo zostať v nym, nemože nábeho slo zapríčiniť.

V najviac baňach ľudia vyhodnia ušivany karbid do uhľových kočach, tak je vypratany s baňach bez nebezpečnosti a bez utraty.

Keď voda né pritečie dost rýchle, lebo zato že drôt No. 2 je prí dlhý, lebo že voda je nečistá, to teba drôt vybrať s lampy, utrátiť ho lebo udrhnúť ho so šmirglovim papierom lebo so šmirglovim.

Plamennary, gumové kruhy a plst' na Baldwinových Lampách, sú to najlepšie do mostu byť sňo-tované a sú zarúčené. Ak je dáto chybné, my ho besplatné premeníme.

Daktóre obchoďníky kupujú horšie kusy, — ne prijímajte len čo je pravdivo, to Ván sčetoji viac a sté listy že dostanete najlepšo v jakosti. Napo-dobenias je nikdy taká dobrá ako vlastný članok.

HOGY HASZNÁLANDÓ A "BALDWIN" CARBID BANYA LÁMPA.

1. Töltse meg a lámpa alját félig karbid-dal. Ha túlsokat tölít bele, elzárja a gázok útját. Egy töltés 2½ óráig tart.

2. Gázvesztesség elkerülése végett csavarja az alját szorosan a lámpához.

3. Egy kis zsír a csavar menetén a lámpát tartósabbá teszi.

4. Mikor a lámpát tölti vagy üríti, ne rontsa a csavar menetét avval, hogy kőhöz üti. Ha a csavar elromlik, a gázok kiszabadulnak.

5. A lámpa gyújtásához fedje fel a víztar-tót és töltse meg három negyedéig vízzel. Ne nedvesítse meg az égőt, mert bedugulhat.

6. A mint a víz a karbid-ot eléri, gáz fejleszt és meggyújtható.

7. Ha a láng gyengül, azt jelzi, hogy a karbid nem kap elegendő vizet. Forgassa ne-hányszor körül a drótot, mely a lámpa tetején van. Ne nyúljon a dróthoz, csak ha a láng túl gyenge.

8. Az égő tisztítására használja az égő-tisztítót, mely minden lámpához mellékelve van.

9. Ha a drót a lámpa égése közben kihúzó-dik, öntse ki a vizet és helyezze vissza a dró-tot.

10. Tartsa a lámpáját tisztán, így nagyon hasznavehetőnek és sokkal tartósabbnak fog bizonyulni. Alkalmilag vegye ki a nemezda-rabot és tisztítsa meg, vagy tegyen be újat. A nemez átszűrő a gázt, jobb fényt ad és tisztán tartja az égőt.

11. Ezen lámpa feltétlen biztos, gyermek is kezelheti, — felfordítva sem okoz bajt. Ha a lámpa a csavar körül kigyúll, annak a jele, hogy nincs kellően becsavarva, ilyen esetben fújja ki a lángot és szorítsa meg a csavart. Tartsa a záró és gummívég tetejét piszkoktól menten, máskülönben a gáz kiszabadul.

12. A külön tartók arra valók, hogy karbid-dal megtöltve a zsebben hordozhatók legyenek. Ha a lámpa töltése elfogy, az új bele helyezendő és a fedő az üres tartóra erősítendő, hogy a zsebet be ne szennyezze. A nap végén a tartók megtisztítandók és kiszáradtatók.

Tartsa meg a salakolt karbidot a tartójában, amíg a bányát elhagyja, vagy ürítse ki a szén-kocsikba.

Ne dobja el a használt karbidot a bánya földjén, nem azért, hogy veszélyes volna, ha nem azért, mert mikor eldobja kellemetl-e szagot áraszt. Az a csepp gáz a mi még esze-tleg benne marad, semmi bajt nem okozhat.

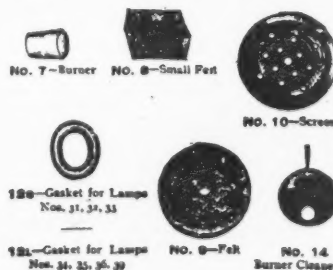
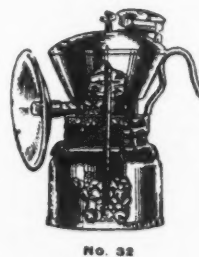
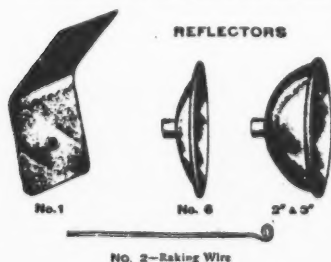
A legtöbb bányában az emberek a használt karbidot a szénkocsikba ürítik, így a bányából ki lesz szállítva minden baj és költség nélkül.

Ha a víz nem működik elég gyorsan, vagy a 2. számú drót túlhosszú volta miatt, vagy piszkos víz használata folytán, akkor a drót a lámpából kiszendendő és vagy smirglipapi-rossal vagy alkalmas késsel megtisztítandó és lekaparandó.

A lángzó, a gummi-gyűrűk és a nemez, melyek a Baldwin lámpákban használtak, a lehető legjobbak és szavatolva vannak. Mi ilyen kisérletünk mindegyikét, ha hibát.

Nemely kereskedő hitvány minőséget tart, — de ön követelje a valódit, — az biztos, hogy ugyanazért az ártért a legjobb minőséget kapja.

Az utánzat soha nem olyan jó, mint a valódi.



Ref. E. 8.

JAK UŻYWAĆ. BALDWINA GORNICZEJ KARBIDOWEJ LAMPY.

(The "BALDWIN" Carbide Pit Lamp.)

1. Należy na dno rezerwuaru lampy do połowy karbidu. Za dużo może zatamować przejście gazu. Ładunek ten wystarczy na 2½ godziny.

2. Przysrubuj szczególnie dno rezerwuaru do lampy, aby niedopuszczyć straty gazu.

3. Trochę palić się dłuższe.

4. Gdy napelnią, albo wypróżnią lampę, nie uszkodź nici przy szrubie, uderzając ją o kamień. Gdy szruby są zepsute gaz uchodzi.

5. Aby zapalić lampę, otwórz pokrywę od wody i naley trzy pełne kwarty wody. Nie porwałaj, aby palnik był suchy, ponieważ może się zamknąć.

6. Jak tylko woda zetknie się z karbidem, tworzy gaz, gotowy do oświetlenia.

7. Jeżeli płomień opada, to znaczy, że karbid nie otrzymuje dostatecznie wody. Zakręć kilka razy naokoło drutem, który znajduje się na wleku lampy. Nie dotykaj druta, chyba że płomień staje się za nadto małym.

8. Do oczyszczenia palnika używaj czystki palnikowej, która się przesyła z każdą lampą.

9. Jeżeli grabka drucziana jest wysięta, gdy lampę się pali, wylej wodę i włóż ją napowrót.

10. Urzynać lampę czysto, a przekonasz się, że będziesz miał z niej pożytek i trwać będzie dłużej. Od czasu do czasu zdejm wójkę i oczyść go, albo zamień nowym. Przez wójkę filtruje się się gaz i wydaje lepsze światło i utrzymuje palnik w czystości.

11. Lampa ta jest zupełnie bezpieczną i może być obsługiwana nawet przez chłopca. Wywołanie jej nie robi szkody. Jeżeli lampa pochwyty płomień naokoło łącznika, z powodu złego zaszrubowania, —zadmuchnij płomień i przykręć mocno szruby. Utrzymuj wierzch podpórki i gumowego gazownika w stanie wolnym od brudu, —w przeciwnym bowiem razie, gaz się ułotni.

12. Zapasowe dwa rezerwuary są przeznaczone do noszenia w kieszeni, gdy są napelnione karbidem. Gdy ładunek w lampie się zużyje, świeży umieszcza się w lampie, a przykrywkę kładzie się na wyczerpany ładunek; tym sposobem nie brudzi i kieszeni. We dnie gdy nie trzeba palić, należy oczyścić zbiorniki i wysuszyć.

Trzymaj rozwalony karbid w zbiorniku dotąd, aż wyjdiesz z kopalni, lub wypróżnij go do Wagonów Węglowych.

Nie rzucaj zasytego karbidu w kopalni na ziemię, nie dla tego, iż toby przedstawiało niebezpieczeństwo, ale ponieważ, gdy się go ruszy, z posłusku sprawa nieprzyjemny odór. Trochę gazu w nim pozostałego, nie sprawia żadnego kłopotu.

W wielu kopalniach ludzie rzucają zużyty karbid do węglowych wagonów, tak, że się go usuwa z kopalni bez kłopotu i kosztu. Jeżeli woda nie podaje dość, prędko, albo z powodu, iż wystający drut No. 2 jest trochę za gruby, lub z powodu nieczystej wody, drut powinien być wyjęty z lampy i oczyszczony, albo okrojony papierem szkielem nalepianem, lub odpowiednim nożem.

Palenisko, gumowe pakunki i filce do Lamp Baldwin są najlepsze, jak tylko mogą być zrobione i są gwarantowane.

Każdy niedokładny odmieszamy bezpłatnie. Niekiedy kupcy nabywają niższego gatunku części, więc naley, aby el dali oryginalne, —które nie kosztują wcale drożej, a dają pewność, iż masz najlepszy gatunek.

Nasładowany przedmiot nigdy nie dorówna oryginalnemu.

ISTRUZIONI PER L'USO DELLA LAMPADA "BALDWIN" A CARBURO, PER MINIERA

1. Riempite il fondo della lampada a metà di "carburo". Troppo carburo potrebbe facilmente otturare il passaggio del gas. Questa carica sarà sufficiente per circa due ore e mezzo.

2. Vitare bene il fondo della lampada onde impedire la fuga del gas.

3. Un tantino di grasso sulle viti prolunga la durata della lampada.

4. Quando riempite o vuotate la lampada, non guastate i fili delle viti col batterla contro la roccia. Quando le viti sono guastate, il gas se ne fugge.

5. Per accendere la lampada, aprite il coperchio dell'acqua e riempite il vuoto d'acqua per tre quarti. Badate che il becco non si bagni quando richiudete.

6. Appena l'acqua viene a contatto col carburo, si produce il gas ed è pronto per accendersi.

7. Se la fiamma s'abbassa, vuol dire che il carburo non riceve acqua sufficiente. Allora fate girare il filo di ferro che trovasi sopra la lampada per poche volte. Non dovete toccare quel filo tranne nel caso in che la fiamma sia troppo bassa.

8. Per pulire il becco, usate il pulitore dei beccchi che vi viene spedito con ciascuna lampada.

9. Se per caso il filo di rame sortisse dal suo posto, vuotate immediatamente l'acqua dalla lampada e rimettete il filo di rame prima di riempirla.

10. Mantenete la lampada pulita ed allora ne avrete un buon servizio e vi durerà molto più a lungo. Di tanto in tanto, togliete via il feltro e ripulite, o rinnetecete un pezzo di feltro nuovo. Il feltro serve a filtrare il gas, producendo miglior luce e mantenendo il becco pulito.

11. Questa lampada è assolutamente enoqua e può essere usata da un ragazzo. Se anche si rovesciasse, non si produrrebbe nulla di male. Nel caso in cui la lampada si accendesse intorno alla giuntura a cagione delle viti non bene serrate, smorzate la fiamma col soffio e chiudete bene le viti. Mantenete la parte superiore del regolatore e l'anello di gomma ben puliti; altrimenti il gas sfugge.

12. I recipienti inferiori delle lampade possono, quando riempiti di carburo, portarsi in sacco. Quando una lampada ha esaurito il suo combustibile, un nuovo fondo viene collocato nella lampada ed il coperchio va posto su quello usato, mantenendo quindi le tasche pulite. Quando avete finito di usare la lampada per quella giornata, ripulite il recipiente ed asciugatelo bene.

Ritenete il carburo usato nella sua carica e non gettatelo via finché non siete uscito dalla miniera, oppure vuotatelo nei carri del carbone.

Non gettate via per terra nella miniera il carburo usato, non è che ciò sia pericoloso, ma perché, mentre è ancora umido, emana un odore disagiata. Il poco gas che può rimanere nella carica non può causare nessun male.

Nelle principali miniere i minatori gettano via il carburo usato nei carri del carbone, e così viene esportato dalla miniera senza costo o noie.

Qualora l'acqua non cada abbastanza in fretta sul carburo perché il filo d'ottone No. 2 è un po' grosso, o perché si è usato dell'acqua sporca, togliete fuori il filo dalla lampada e pulite bene, oppure raschiate con carta vetrata o apposito coltello.

Il becco del gas, anelli di gomma e filtri della Lampada Baldwin sono i migliori che si possono trovare e sono garantiti.

Noi rimpiazziamo senza costo di spesa quelli che possono essere difettosi.

Vi sono dei negozianti che comprano parti accessorie di qualità inferiore.

Insistete perché vi vendano quelle genuine, non costano di più e voi siete sicuri di avere la qualità migliore.

Un'imitazione non è mai simile all'originale.

MODO DE USAR LAS LAMPARAS DE CARBURO "BALDWIN" PARA MINAS

Primero.—Llévese de carburo el fondo de la lámpara hasta la mitad. Si se pone demasiado, puede interrumpirse el paso del gas. La cantidad indicada dura dos horas y media.

Segundo.—Atorníllese con seguridad el fondo a la parte superior de la lámpara para así evitar la pérdida de gas.

Tercero.—Mediante la aplicación de un poco de grasa a la rosca de los tornillos, se alarga la duración de la lámpara.

Cuarto.—Téngase cuidado de no hacer daño a la rosca del tornillo permitiendo que choque con las rocas, al vaciar ó llenar la lámpara. Tan pronto como los tornillos se dañan comienza el escape de gas.

Quinto.—Para encender la lámpara, ábrase el receptáculo del agua y llénese hasta las tres cuartas partes. Evítese de todos modos que el quemador se humedezca, pues lo contrario puede cerrarse.

Sexto.—Tan pronto como el agua se pone en contacto con el carburo, prodúcese el gas y puede entonces encenderse.

Séptimo.—Si la llama es débil, prueba es de que el carburo no recibe la cantidad de agua suficiente. Desele varias vueltas al alambre que está en la parte superior de la lámpara, advirtiéndose que no hay necesidad de tocar dicho alambre, á menos que la llama sea demasiado pequeña.

Octavo.—Para limpiar el quemador, hágase uso del limpiador que para tal objeto se suministra con cada lámpara.

Noveno.—Si el alambre de atizar se encama mientras se halla encendida la lámpara, derámese el agua y colóquese de nuevo el alambre.

Décimo.—Consérvese la lámpara limpia y se hallará muy útil, aparte de que así aumentará su duración. De vez en cuando se debe quitar el fieltro y limpiarse, ó bien ponerse uno nuevo. El gas se filtra á través del fieltro, produce una luz mejor y mantiene el quemador limpio.

Undécimo.—Esta lámpara ofrece seguridad absoluta, y hasta un niño puede manejarla. Aun cuando se vuelque no ofrece peligro. Si toma fuego alrededor de la juntura, debido á no haberse atornillado bien, apáguese la llama y áprítese más la rosca hasta que atornille en forma. Evítese que le caiga fuego a la parte superior del receptáculo y á la empaquetadura de caucho; de lo contrario, se escapará el gas.

Dodécimo.—Los otros receptáculos ó fondos, cuando van llenos de carburo, son para llevarse en el bolsillo. Al agotarse la cantidad de carburo que habia en la lámpara, colócase una nueva cantidad. Tépanse entonces bien el receptáculo del carburo agotado, para no dar lugar á que se ensucie el bolsillo. Terminado el trabajo del día, límpiense los receptáculos y séquense.

El carburo apagado debe guardarse en el recipiente hasta salir de la mina, ó botarse en un carro de carbón.

No debe echarse sobre el suelo en la mina el carburo apagado, no porque sea peligroso así hacer, sino porque arroja un olor desagradable que dura por poco tiempo. La pequeña cantidad de gas que queda no puede resultar en inconveniente alguno.

Es de costumbre usual en las minas botar el carburo apagado en los carros de carbón, pues así se saca de las minas sin trabajo ó gasto alguno.

Si la alimentación del agua no sea bastante rápida, debido al estar un poco demasiado grueso el alambre atizador No. 2, ó al empleo de agua sucia, este alambre debe quitarse de la lámpara y limpiarse ó rasparse con papel de lija ó con un cuchillo.

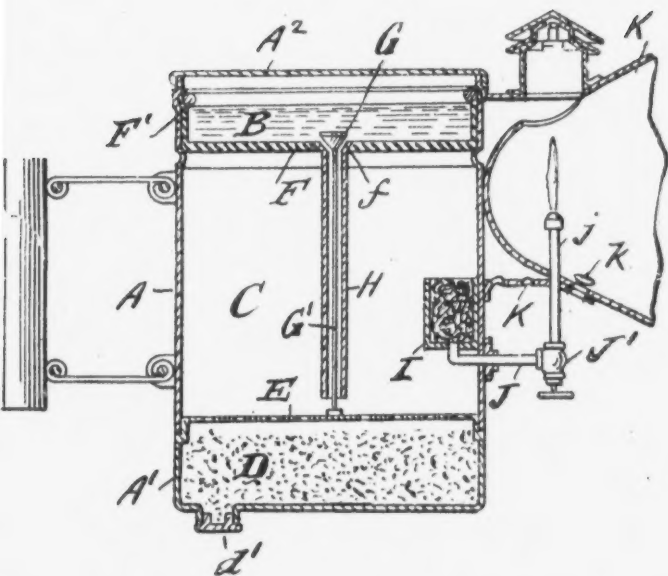
El quemador, los anillos de goma y los fieltros para las Lámparas "Baldwin" son los mejores que se pueden fabricar, y están garantizados. Sustituiremos con otros perfectos cualesquiera que resulten defectuosos.

Algunos negociantes compran partes inferiores. Insistase en obtener las genuinas, pues no cuestan más y el comprador tendrá la seguridad de obtenerlas de la mejor calidad.

Una imitación jamás es igual al artículo original.



Complainants' Exhibit 16.



No. 323.

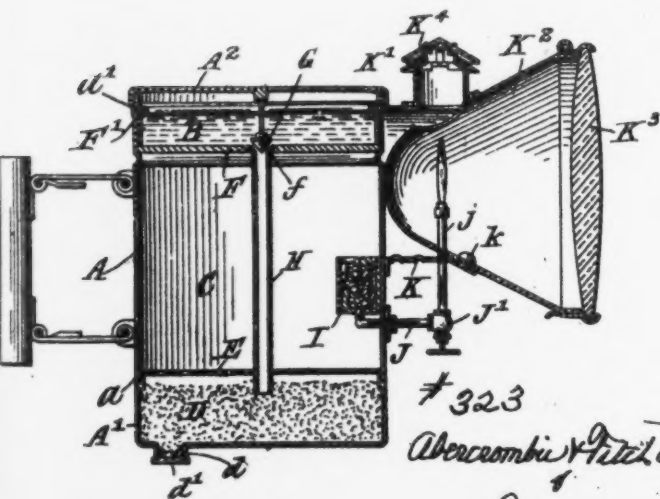
Abercrombie & Fitch Co } $\phi 227$.
 Baldwin



— ~~CORRECT~~ ILLUSTRATION —

of

FIG. 1 of Handschy patent with ^{second} change suggested in specification.



323
Abercrombie & Fitch Co.

Baldwin

228

Specification, p. 1, lines 84 to 87.

"This stem ~~may extend upward from the valve~~
~~and be secured to the top A² of the chamber B"~~

COMPLAINANTS' EXHIBIT No. 13.

Directions for Operating the Justrite Acetylene Mine Lamp.

Filling. Unscrew bottom and fill about half full of — inch car-
p, screw bottom on tightly to the lamp, open filler cap on top and
with water.

Lighting. After lamp is filled open water valve on top by giving it
few turns, wait a minute and then light; the wire in the center of
valve is used to free the tube from any stoppage or sediment which
ects on the end of same; a little careful study will soon teach you
obtain good results.

Too much water will cause the flame to blow and force the gas to
pe out of the lamp.

Emptying Bottom. When doing so do not injure screw cap or
eads, scrape out the exhaust material with a small stick and shake
lightly.

New packing is absolutely necessary occasionally to filter the gas,
t becomes clogged with dirt and prevents the flow of gas.

Perfectly safe, even upsetting the lamp does no harm; always be
eful to keep the rubber gasket clean, so the gas will not escape and
ch fire; grease threads of the cap to prevent corrosion.

Tip. Hole in same should never be enlarged. These tips are a
y invention with four small holes on sides — Air Intake to prevent
bonizing, which increases the lighting efficiency.

(Here follow picture marked pages 227 and 228.)

229

DEF'TS' Ex. C.

2-390.

UNITED STATES OF AMERICA,
DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all to whom these presents shall come, Greeting:

This is to certify that the annexed is a photographic copy of P-116, which page contains an Article with Illustration relative to "Gasindustrie", issue of May 7, 1898, of a Publication in the Library of this Office, entitled:— Dinger's Polytechnisches Journal, Jahrg. 79, Bde. 307-8, 1898; said issue having been received in the Scientific Library May 21, 1898.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this 20th day of June, in the year of our Lord one thousand nine hundred and thirteen and of the Independence of the United States of America the one hundred and thirty-seventh.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.

(Here follows diagram marked page 230.)

Zu diesem Behufe ist die Hülse der Innentische des Glases in viele kleine Stufen zerlegt, die von den Nadelstichen gelöst sind. Von diesen Stufen können auf Veranlassung des Glases eine gewisse Anzahl miteinander verbunden sein. Durch die Bewegung der Nadelstiche *b* in der Compensirung mit einem anderen System wird ein Strom geschoben, welcher unter Einwirkung des elektrischen Apparats die Verdrängung der Gase herbeiführt. In der Bewegung der Compensirung nach rechts (offen) gelassen, wird die Lampe.

Die Lampe der Mutter 2. erfordert werden kann. Zu dem Behufe der Innentische ist am Schlauchende des Brenners ein Ventil vorgesehen, an das die Perforationsöffnung angeschlossen wird. Luft durch den Brenner geleitet werden kann.

Das nachfolgende Bild zeigt die Lampe in der Stellung, in der sie im Falle einer Verdrängung der Gase zu stehen kommt.

Gasindustrie.

Schmitts Acetylenlampe für Fahrräder.

Von A. Schmitt.

Zur Beleuchtung von Fahrrädern sind bisher drei Systeme im Gebrauch. Das eine, das elektrische, ist seit langem bekannt, das zweite, das Gas, ist seit langem bekannt, das dritte, das Acetylen, ist seit langem bekannt. Das Acetylen ist ein Gas, das aus Kalkstein und Wasserstoffgas besteht, das in der Lampe in der Form von Acetylen gasförmig vorliegt, das in der Lampe in der Form von Acetylen gasförmig vorliegt, das in der Lampe in der Form von Acetylen gasförmig vorliegt.

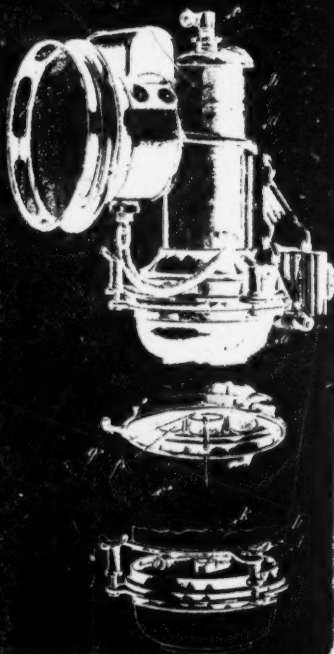
Um die Lampe in Gebrauch zu nehmen, werden die drei Einschrauben (siehe) und der Carbidhalter so gedreht, dass die Gewindestifte der Schrauben aus den Haken *a* herausragen, so dass der Carbidhalter abgenommen werden kann. Aus letzterem entfernt man den zum Niederdrücken des Carbids dienenden Deckel und setzt ihn auf, darauf, dass kein Carbid in das zentrale Rohr *c* fällt. Nun wird der Carbidhalter wieder angeschraubt, der Wasserbehälter mit reinem Wasser gefüllt und die Lampe ist zum Gebrauche fertig.

Um Gas zu erzeugen, wird der Ventilstift *d* bis 1/2 Umdrehung nach rechts gedreht, wodurch das Wasser tropfenweise dem Carbid zugeführt wird und Gas liefert. Letzteres steigt dann durch den Schlauch zum Brenner. Die Lampe brennt mit einmaliger Füllung etwa 8 Stunden lang, und wird eine größere oder kleinere Flamme dadurch erzeugt, dass mehr oder weniger Wasser dem Carbid zugeführt wird.

Nach dem Gebrauche wird das Wassertropfenventil geschlossen und die Flamme durch Zudrücken des Schlauches gelöscht.

Zur Regulierung des Wassertrittes, sowie um einem Verstopfen der Tropfenöffnung vorzubeugen, steckt in den Rohrende des Tropfenventils ein Draht *e*.

Ungen das Verkalten des Brenners ist am Wasserbehälter unterhalb des Gastrittes ein Hahn *f* angebracht, der zum Zwecke des Reinigens durch Heranschieben des Hahns *f* erreicht wird.



Schmitts Acetylenlampe für Fahrräder.

und damit Sicherheit gegen Explosionen. Die Lampe ist frei von Condenswasser. Ein Aluminiumscheinwerfer, der bei 1 abnehmbar ist, unterstützt die Lichtwirkung, so dass eine Leuchtkraft von 147 Normalkerzen erreicht wird.

#323
Abercrombie & Fitch Co.
Baltimore } #230.



Schmitt's Acetylene Bicycle Lamp.

(With Illustrations.)

For the lighting of bicycles, oil lamps, candles, and kerosene lamps were first adopted for use, while lately electric lamps have also been constructed, without, however, having obtained the desired results with any one of them. The Oberrheinische Metallwaarenfabrik of Mannheim has recently constructed an acetylene-gas lamp which, as far as lighting power and safety against strong winds and shocks are concerned, is meeting all requirements. As shown in the illustration, this lamp is composed of a water receptacle *b* to which are connected a (water) drop-valve *c* and a rubber tube for the induction of the gas. The latter is made short enough to prevent its baking, thus avoiding an unsteady light, and the consequent extinguishing of the flame. *a* is the carbide receptacle secured to hook *h* by means of the thumb screws *i*, said hook being fastened to the frame attached to the water-receptacle and tightened by a rubber washer, so as to be secure against any loss of gas.

For operating the lamp, the three thumb screws *i* are loosened and the carbide receptacle *a* is turned into such a position that the threaded portions of the screws *i* are allowed to slide out of the hook, thus admitting of the convenient removal of the carbide receptacle.

The lid of the latter, serving to press down the carbide within the receptacle, is then removed and the receptacle is filled with the material, care being taken during the filling operation not to let any

carbide fall into the ^{central sieve} *center straining* tube *k*. Then the carbide receptacle is again secured by screws, the water receptacle is filled with pure water, and the lamp is ready for use.

For generating the gas, the valve stem *c* is turned around to the right, (making from) $\frac{1}{4}$ to $\frac{1}{2}$ of a revolution, whereby ^{fed to the} ^{dropwise} the water is (allowed to drop into) the carbide Δ , thus generating the gas. The latter will then rise in the tube to feed the burner. With

^{filling} the (receptacle) full of carbide, the lamp will burn for about eight hours, while the size of the flame will depend entirely upon the greater or smaller quantity of water admitted to the carbide.

After the lamp has been used, the water drop-valve is shut off and the light extinguished by a simple pressure of the hand upon the rubber tube.

^{the} For regulating the water feed and preventing the clogging up of the water drop-hole, a wire *e* is inserted in the tubular end of the water drop-valve.

^{lining up of} To avoid calcination in the burner, there is provided on the water receptacle *b*, below the gas outlet, a straining device *f* which can be removed by releasing the nut *g*, for the purpose of cleaning the burner. For cleaning the burner tips, air is blown through them by

means of an air pump screwed on to the burner by the threads provided at its end for connection with the rubber tube.

The gas feed tube offers perfect safety against too high a pressure in case of too strong a generation of gas, thus preventing any danger of explosion. The lamp is entirely free from condensed water. A reflector made of aluminum, removable at *d*, increases the strength of the light, so that 147 normal candle power may be obtained.

233 STATE OF ILLINOIS,
County of Cook, ss:

I, A. E. Crocker, of the City of Chicago, County of Cook and State of Illinois, do hereby certify that the above translation is a correct translation of the German article appearing upon the photographic copy of page 116 of Dingler's Polytechnisches Journal, of the issue of May 7, 1898.

ANSUTTO E. CROCKER.

Subscribed and sworn to before me this 31st day of December, 1914.

[Seal Sadie M. Ryan, Notary Public, Cook County, Ill.]

SADIE M. RYAN,
Notary Public.

234 DEF'TS' EX. D.

UNITED STATES OF AMERICA,
DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the Records of this Office of the File Wrapper and Contents in the matter of the Letters Patent of Frederic E. Baldwin, Number 821,580, Granted May 22, 1906, for Improvement in Acetylene-Gas-Generating Lamps.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this 15th day of April, in the year of our Lord one thousand nine hundred and fourteen and of the Independence of the United States of America the one hundred and thirty-eighth.

[SEAL.]

J. T. NEWTON,
Acting Commissioner of Patents.

35

2-437.

Number (Series of 1900)
165,587.

Div. [30]* 31.
(x'r's Book) 151/625.

1903.

Patent No. 821,580.

Name: Frederic E. Baldwin.

Of New Brighton (New York City),

County of —,

State of New York.

Invention: Acetylene Lamps.

Reissued Mar. 11, '13, No. 13,542.

Original.

Renewed.

Parts of application
filed.

Petition,	July 15, 1903.	—, 190—.
Affidavit,	" " 1903.	—, 190—.
Specification,	" " 1903.	—, 190—.
Drawing, 1 [2]* sh't'[s]*	" " 1903.	—, 190—.
Sheet 2 canceled Apr. 2, '06.		
Model or specimen No. —,	190—.	—, 190—.
1. First fee, cash, \$15,	July 15, 1903.	—, 190—.
" " cert.,	—, 190—.	—, 190—.
Appl. filed complete,	July 15, 1903.	—, 190—.
Examined: G. S. Ely, Ex.,	April 9, 1906.	—, 190—.
Countersigned: W. W. Mortimer,	—, —,	—, 190—.
	For Commissioner.	For Commissioner.
Notice of allowance	April 12, 1906.	—, 190—.
Final fee, cash, \$20,	May 3, 1906.	—, 190—.
" " cert.,	—, 190—.	—, 190—.
Patented,	May 22, —.	—, 1906.

2. Associate attorney-, Hall and Heylmun, Attorney-, Kerr, Page
1003 F Street N. W., City. & Cooper, 149
B'dway, New
York City.

3. Name: — —.

Serial Number —.

Patent No. 165,587.

Date of Patent, —.

[On the margin:] Division of app. No. —, filed — 190—.

[•Words and figures enclosed in brackets erased in copy.]

236 \$15, C'k, Received Jul- 15, 1903. J. Chief Clerk, U. S. Patent Office.

U. S. Patent Office,
Received Jul- 21, 1903,
Division 31.

Ser. No. 165,587.

To the Commissioner of Patents:

Your Petitioner, Frederic E. Baldwin a Citizen of the United States, residing at New York, in the County of Richmond, and State of New York, Post Office address 325 Broadway, New York City prays that letters patent may be granted to him for the improvements in Acetylene Lamps set forth in the annexed specification; and he hereby appoint- Kerr, Page & Cooper (a firm composed of Thomas B. Kerr, Parker W. Page, Drury W. Cooper, and John C. Kerr; Registration No. 2,413), of No. 149 Broadway, New York City, New York his Attorneys, with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent Office connected therewith.

FREDERIC E. BALDWIN.

237 To all whom it may concern:

Be it known that I, Frederic E. Baldwin, a citizen of the United States, residing at New Brighton, in the City of New York, County of Richmond and State of New York, have invented certain new and useful improvements in Acetylene Lamps, of which the following is a specification, reference being had to the drawing accompanying and forming a part of the same.

The invention upon which is based the present application for letters patent is a lamp designed to generate and burn acetylene or similar gas, and is an improvement on the form described and shown in a patent granted to me August 28th, 1900, No. 656,874. Like the lamps of said patent, that of the present application is intended for use and adapted to use as a bicycle, automobile, yacht or miner's lamp, or for any other analogous purpose, it being necessary only to change its form or dimensions to adapt it to any one of the purposes mentioned.

In the drawing hereto annexed, Fig. 1 is a central vertical section of the complete lamp.

Fig. 2 is a similar view of a portion of the lamp exhibiting a modification.

Fig. 3 is a similar view of a further modification.

Figs. 4, 5 and 6 are details of parts of the lamp showing another modification.

Per A. [Fig. 7 is a vertical section showing the feed regulating wire employed in another form of lamp.]*

The features of novelty which characterize my present

invention reside in details of construction and will be pointed out in the course of the following description of the devices illustrated in the drawings and the manner of using the same, and more particularly specified in the subjoined claims.

238 Generally considered the lamp is one comprising a metallic or other receptacle A, preferably provided with a bottom B which may be readily detached and which when the lamp is in use is held firmly in position by suitable clamps C so as to make a water and gas tight closure.

The receptacle is divided, preferably horizontally, by a partition D into two compartments, the upper one E designed to serve as a water chamber or reservoir, the lower F, as a gas generating chamber adapted to contain a receptacle G for calcium carbide, which is generally attached to or forms the detachable bottom.

In the top of the lamp is an orifice, closed by a screw cap H, or similar device for the introduction of water to the reservoir, and from the gas generating chamber F through the water reservoir E and out through the top of the lamp, extends a tube I which conducts the gas to the burner J.

I proceed now, to a detailed description of the features enumerated below which I have devised as improvements in lamps of the general character above described.

The Means for Effecting and Controlling the Generation of Gas.

A quantity of calcium carbide preferably in a finely divided condition is placed in the receptacle G, and retained by any suitable device such as a spiral spring K, interposed between the bottom of the water reservoir E and a loosely fitting or perforated plate K', care being taken to adjust the tension of the spring so that the proper degree of pressure will be exerted upon the mass of carbide.

A tube L leads from the water reservoir down into the receptacle G and forms a duct which introduces the water into the body

239 of carbide which said receptacle is designed to contain.

Various means have been employed to regulate or control the normal rate of flow of water through a water supply tube. For example, the bore of the tube has been made of small diameter, but this plan has not been found practical for various reasons. In the first place, the discharge outlet thereof is under pressure of several inches of water, and it is practically impossible to make the bore so minute that the water will issue in sufficiently small quantity. If the attempt is made to secure this small flow by making the tube very minute it then becomes so easily clogged that the operation of the lamp is rendered extremely uncertain. The smallest particle of foreign matter in the water, or a bit of slaked carbide carried into the bore by back pressure of the gas, will stop the flow completely and the lamp will go out. Such a tube is also difficult, in fact also impossible to clean. Another method which has been employed is to use a duct of comparatively large bore, and fill the same with a wick of more or less loose texture, for the purpose of checking the supply. This for

a time operates with some degree of success, though from the very nature of the material used the precise amount of the feed can never be exactly determined. A valve is generally necessary to regulate the supply. Furthermore, when the lamp has been used for a time the wick, which of course must act as a strainer, becomes filled with solid matter, such as sand, dirt, and organic particles contained in the water, so that the feed is reduced. This necessitates frequent adjustment of the valve, to restore the proper supply. In time the wick becomes completely choked, and the user, often unskilful in such matters, must tamper with the lamp and insert a new wick, which is at best a troublesome procedure. Again, if the lamp has not been used for some time the wick dries out, and a very appreciable time is required to soak it up so that the water will again flow through.

The method which I have invented for securing the proper feed under all circumstances without the above objectionable features is to make the bore of the duct of comparatively large size, and then restrict it by means of a wire or rod, preferably centrally located therein, to leave a channel of the proper size. This arrangement is simple, but in a long experience it has been found to be entirely successful. It is possible to secure the correct drop-by-drop feed with a duct of considerable size, since the friction of the water on the large area of the tube wall and wire reduces its flow. This retarding friction may be regulated by varying the size of wire used. The duct does not become choked, since if foreign particles are deposited therein the water can take a zig-zag course around it without the supply being appreciably affected. If it is at any time necessary to clean the tube the wire is simply reciprocated and rotated a few times from the outside of the lamp, without disturbing the position of other parts. This nice regulation of the flow enables me to entirely dispense with the troublesome adjustment of the valve. If a valve is used at all it is employed to shut off the flow entirely, and not to regulate it. The construction just described is shown in Fig. 1, in which L is the water supply tube and N the constricting wire. In this illustration the size of the parts is of course exaggerated. Fig. 2 shows a similar construction, with a valve M on the constricting wire M', which may be set by turning the screw plug M'' in the top of the lamp.

Per D.

The position of this valve may vary widely without departure from the scope of my invention, and as illustrative of this fact attention is directed to Fig. 7, in which the valve is located in a different position. In the figure referred to, T indicates the outer casing of the generator, adapted to contain water and therefore serve as the water reservoir before mentioned. A closure T' is provided, carrying a bell or dome T², connected with the gas outlet T³ by a tube or conduit T⁴. In the bell, inserted from the bottom and suitably supported in position, is a carbide receptacle U, having a tube U' extending upward from the bottom, surrounded by a reticulated cylinder U². Within

the tube is the restricting wire U^3 . In the gas outlet T^3 is a cock or valve T^3 , corresponding to the valve M before mentioned. From the foregoing the operation of the device will be readily understood. The cock T^3 being closed, the bell is placed in the reservoir, which contains a suitable quantity of water, as shown. The water, however, will not rise in the tube U' on account of the pressure of the air in the bell. But as soon as the valve is opened the pressure is relieved, the water overflows into the carbide receptacle, and the generation of gas begins. As long as the gas generated is all able to be consumed at the burner, the flow of water is uninterrupted, but if the gas is generated in excess the pressure rises in the bell and carbide receptacle and the flow of water is at once stopped. As soon as the excess is consumed the pressure is reduced to normal and the flow begins again. Thus the lamp is automatically regulated to generate just enough gas for the capacity of the consuming device. If it is desired to stop the flow of water and to extinguish the flame, the cock T^3 is turned, and the pressure, being now unrelieved, immediately checks the flow through the tube U' . The supply of water is thus cut off, and the valve P forms the same function in its present location as in its former position shown in Fig. 2.

[Matter enclosed between rules erased in copy.]

In some cases, however, there is employed in connection with the means for introducing the water into the mass of carbide, a device in the nature of a stirrer, which on proper manipulation may be used to break up the mass of carbide surrounding the outlet of the water jet, and which, by having become slaked and caked by the action of water prevents the proper percolation of the latter to the unslaked carbide in the receptacle G , Fig. 1.

As such device I employ a stem or rod N which extends down through the tube L and is bent at substantially right angles to form an arm N' . This rod may form a prolongation of the valve stem M' in Fig. 2, or, in case no valve is used, may extend from the top of the lamp down through the water reservoir, as shown in Fig. 3.

As calcium carbide possesses strongly absorptive properties, the introduction of water through the tube L will result in the gradual caking of the material about its outlet, but the lime thus produced becomes gradually less permeable to the water, so that an insufficient quantity of gas is generated to maintain the proper flame.

When this becomes noticeable, the rod N is turned so as to cause the arm N' to break up to a greater or less extent the mass of lime, and in practice I have found that under ordinary conditions this is amply sufficient to insure a substantially uniform generation of gas until all of the carbide in the receptacle G is exhausted. In the larger sized lamps it is desirable to employ two or more water tubes L , and, if desired, stirring rods N , extending down to different points in the carbide receptacle. This is indicated in Fig. 4, which is an under plan view of the bottom D of the water reservoir, showing three water tubes L in section. It is, however, desira-

ble when a plurality of stirring rods are employed, that some means be provided for actuating all of them simultaneously. A device suitable for this purpose is shown in Fig. 6, in which *O* is a ring, placed on top of the lamp, with which bent ends of all the rods *N* engage, so that a partial rotation of the ring will impart a corresponding movement to each rod.

The Means for Consuming an Excess of Gas.

Although the means described above effect a remarkably uniform generation of gas, it sometimes occurs that an amount of gas in excess of that required for the burner is temporarily produced, and the usual plan is to provide some channel for its escape into the air. When the lamps are used in confined places, however, this method of disposing of the unconsumed gas is objectionable, owing to its very disagreeable order. To remedy this I provide a channel of escape which terminates in the immediate vicinity of the burner proper, so that any excess of gas which may issue will be ignited by the flame of the burner and consumed. This may be accomplished in various ways, but the most practical of which I am at present aware is that shown in Fig. 1.

In this figure, there is shown a tube *P* which extends downward from the top of the lamp to a point near the orifice of the water tube *L* in the lower part of the water reservoir *E*. The rod *N* extends through this tube, without leaving sufficient space for passage of escaping gas. The air to replace the water which flows into the carbide chamber enters through the burner and tube hereafter described.

When more gas is generated than is carried off by the burner tube, it forces the water up through the tube *L* and enters the water reservoir. Practically none of the gas will find its way up the tube *P* under any circumstances, but rising to the upper part of the reservoir *E* it escapes through a tube *R* provided with a vent *S* of such character as to constitute a burner, and in such close proximity to the main burner *J* that any gas issuing through it will be ignited by the flame of the latter and burned.

The specific construction of the various parts of my lamp may be, as will be seen from a consideration of the nature of the improvements very greatly varied without departing from the invention.

What I claim is:

Per B.

1. In a lamp of the kind described, the combination with a water reservoir, and a receptacle for calcium carbide, of a water duct or tube extending from the former into the latter and a wire in said duct or tube restricting the same to permit only a predetermined quantity and rate of flow of water into the carbide as set forth.

2. In a lamp of the kind described, the combination with a water

reservoir and a receptacle for calcium carbide, of a plurality of water ducts or tubes extending from the former into the latter, and a wire in each duct or tube, restricting the same to permit only a predetermined quantity and rate of flow of water into the

Per B. carbide, as set forth.

[Matter enclosed between rules erased in copy.]

[3]* 1^b. In a lamp of the kind described, the combination with a water reservoir, and a receptacle for calcium carbide, of a tube extending from the former into the latter so as to be embedded in the mass of carbide contained in said receptacle, and a rod or stem extending through said tube into the carbide receptacle and *having its end formed as a stirrer to break up the*

Per C. *tending from the former* Δ *into the latter so as to be embedded in the mass of carbide contained in said receptacle, and a rod or stem extending through said tube into the carbide receptacle and having its end formed as a stirrer to break up the* slaked carbide around the outlet of the water tube, as set forth.

[4]* 2^b. In a lamp of the kind described, the combination with a water reservoir, and a receptacle for calcium carbide, of a tube extending from the former into the latter so as to be embedded in the mass of carbide contained in the receptacle, a rod extending from a point outside of the lamp through the tube and into the carbide chamber and having its end *bent to form a stirrer for breaking up the* slaked carbide around the outlet of the water tube, as set forth.

[5]* 3^b. In a lamp of the kind described, the combination with a water reservoir, and a receptacle for calcium carbide, of a plurality of tubes extending from the former into the latter so as to be embedded in the mass of carbide contained in the receptacle, a stirrer passing through each tube adapted to break up the slaked carbide around the end of the tube, and means for actuating all the stirrers simultaneously, as set forth.

Per B.

6. In a lamp of the kind described, the combination with a water reservoir, and a receptacle for calcium carbide, of a tube extending from the former into the latter so as to be embedded in the mass of carbide contained in the receptacle, a rod extending from a point outside the lamp, through the tube into the carbide receptacle, restricting the tube to permit only a predetermined quantity and rate of flow of water into the carbide, and a valve to cut off the supply of water to the receptacle, as set forth.

[Matter enclosed between rules erased in copy.]

[* Words and figures enclosed in brackets erased in copy.]

Sub. C¹.

4^b [7].* In a lamp of the kind described, the combination with a water reservoir, a receptacle for calcium carbide, and means for delivering water from the former to the latter, of means for delivering excess of gas from the receptacle into the reservoir, and a vent in the reservoir adapted to supply air thereto during the normal operation of the lamp, and to carry off the surplus gas when generated in excess, and a burner on said vent, as set forth.

[Matter enclosed between rules erased in copy.]

5^b [8].* In a lamp of the kind described, the combination with a water reservoir, a carbide receptacle, and a tube restricted by a wire extending into the carbide receptacle from outside the lamp and open to the water reservoir, a tube exterior to the lamp, connected with the reservoir and ^{adjacent} ^{burner} to the main ^{burner}, and equipped with a burner, said auxiliary burner acting as an air vent to admit air during the normal operation of the lamp.

FREDERIC E. BALDWIN.

Witnesses:

M. LAWSON DYER.

S. S. DUNHAM.

247 STATE OF NEW YORK,
County of New York, ss:

Frederic E. Baldwin, the above named petitioner, being duly sworn, depose- and say- that he is a citizen of the United States and resident of New Brighton, in the City of New York, County of Richmond and State of New York, and that he verily believes himself to be the original, first and sole inventor of the improvement in Acetylene Lamps described and claimed in the annexed specification; that he does not know and does not believe the same was ever known or used before his invention or discovery thereof; or patented or described in any printed publication in the United States of America or any foreign country before his invention or discovery thereof or more than two years prior to this application; or in public use or on sale in the United States for more than two years prior to this application, and that no application for foreign patent has been filed by him or his legal representative or assigns in any foreign country.

FREDERIC E. BALDWIN.

Sworn to and subscribed before me this 14th day of July, 1903.
[SEAL.]

M. LAWSON DYER,
Notary Public (76), N. Y. Co., N. Y.

[*Words and figures enclosed in brackets erased in copy.]

248 2-260.

Div. —, Ro- 169.

Address only "The Commissioner of Patents, Washington, D. C.,"
and not any official by name.

Paper No. 1.

All communications respecting this application should give the
serial number, date of filing, title of invention, and name of the
applicant.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
WASHINGTON, D. C., August 15, 1903.
Mailed " " "

Frederick E. Baldwin, c/o Kerr, Page & Cooper, 149 Broadway, New
York City:

Please find below a communication from the Examiner in charge
your
of [the]* application [of]* No. 165,587, filed July 15, 1903, for
Acetylene Lamps.

F. I. ALLEN,
[THOMAS EWING,]*
Commissioner of Patents.

This case has been examined.

The drawing, Fig. 1, should be lettered at K'. Fig. 2 at M".

Page 1, line 24 should give a brief description of the view, Fig. 7.

In claims 1, 2, 6 the word "predetermined" is thought not war-
ranted by the construction. Applicant does not regulate the feed of
water in any previously conceived or "predetermined" quantity.
What applicant does in effect, is to limit the quantity of water fed
by contracting the passage which in effect is the same as in his prior
patent 656,874.

Claim 1 is met by patent 656,874, *Baldwin, Aug. 28, 1900*, (48
Water feed, Expansible Carbide Container) and rejected. This
claim is also so broad as to be met by patents 622,015, *Peck*, Mar. 28,
1899, (48 Water feed, Percolating) 705,166, *Van Praag*, July 22,
1902, (Water feed, Expansible Carbide Container) and British
patent 15,688, *Schmitt*, July 18, 1898 (Tank and Generator Sepa-
rate).

Claim 2 is rejected upon the patents above. In this claim appli-
cant has simply duplicated or multiplied the number of water ducts.

Claim 6 is rejected upon the patents above.

In connection with claims 7 and 8, see patents 599,098 *Hanotier*,

[*Words and figures enclosed in brackets erased in copy.]

et al. Feb. 15, 1898 (48 Acetylene, water feed); 599,198
 249 *Serras, Feb. 15, 1898, (Water feed, Cells Series); 595,621*
Gobron, Dec. 14, 1897, (Acetylene Valves, gas and water
feed); 655,944, Winch Aug. 14, 1900, (Expansible Carbide con
tainer). Claim 8 covers an aggregation. There is no combination
between tube restricted by a wire and the auxiliary burner. Claim
7-8 are rejected.

ELY, *Ex.*

STOKES.

250 Mail Room,
 Feb. 18, 1904,
 —. S. Patent Office.

U. S. Patent Office,
 Received Feb. 19, 1904,
 Division 31.

Paper No. 2.

A.

Room 169.

Application of Frederic E. Baldwin, Filed July 15th, 1903, Serial
 No. 165,587, for Acetylene Lamps.

NEW YORK, February 16th, 1904.

Hon. Commissioner of Patents.

SIR: In the above entitled application we amend as follows:
 Page 1, between lines 24 and 25, insert:

Fig. 7 is a vertical section showing the feed regulating wire
 employed in another form of lamp.

We send herewith an affidavit under Rule 75 showing the completion of the invention set forth in claims 1, 2 and 6 before the filing date of the *Van Praag patent*, No. 705,166, of record. This patent should therefore be withdrawn as a reference.

The other citations do not, in any sense of the word, anticipate these claims. Baldwin, in his prior patent cited, makes no disclosure whatever of the invention. In lines 9-15, page 2, the patentee says: “* * * If the tapered groove J be present the water begins to flow as soon as the pressure upon the rubber valve permits the latter to rise out of the groove. By this means an extremely nice adjustment of the valve and accurate control of the flow of water are secured.” *It is the valve, not the wire E, that determines the flow to the carbide, and the wire is simply a leader, having a needle point to insure that the drops from the end of the same will be minute.* (Lines 25-38.) The rapidity of the drops is fixed
 251 *by the valve—not by the size of the wire and consequently the size of the annular passage left in the duct.*

In *Peck, 622,015*, of record, the wire F is a “water-spreading” device, to cause the water “to engage with the coils * * * by which it is frictionally retarded.” (Page 1, lines 54-57.) The regu-

lation of the flow is effected by the needle valve K, if it is effected by any means.

In *Br. Pat. 15,688, of 1898*, of record, the patentee says: "The spindle *a* of the valve F has an axial hole through which passes a wire or needle *b*, which extends into the carbide holder A, and has at its upper end a button head *c* by means of which it can be moved up and down from outside the lamp *in order to clear the outlet opening g of the water supply pipe* below the valve of lime or other obstruction. *But this means the lamp can always be kept in proper working order.*" Nothing is mentioned about determining the rate or flow by the size of the wire, which is merely *the cleaning wire commonly employed*.

As is well known to the Honorable Examiner, a prior patent or publication to constitute an anticipation of a later invention must contain a disclosure of the same so full, clear and complete as to enable others skilled in the art to practice the same. Certainly no such disclosure can be found in the references cited. So far as their patents show, the prior inventors have no conception whatever of Baldwin's invention. The latter, by this simple expedient, effects a result long sought in the art,—namely, an automatic control of the feed. *In his lamp, to put the same in operation, the valve is simply opened to its fullest extent; whereupon the proper flow for the normal operation begins. There is no troublesome adjustment of a*
 252 *valve*, easily disturbed thereafter, and the lamp is therefore especially suitable for use by unskilled persons. It is practically "fool proof", since it cannot feed too fast or too slow, but always, under all circumstances supplies the correct amount of water. If the passage chokes up and the flame thereby dimmed, *the wire is reciprocated or rotated a few times*, dislodging the obstruction and restoring normal conditions. We are safe in saying that no other
 marvel

lamp possesses such positive advantages. It is a [novel]* of simplicity, as will be seen from the extract from applicant's catalogue accompanying the annexed affidavit. The references of record furnish no valid reason for the rejection of these claims, which recite a novel construction, performing an entirely new function, effecting a new result, and possessing advantages not found in any of the references.

Nor are claims 7 and 8 met by the references cited against them, and upon a careful reconsideration of the same we believe the Examiner will agree with us. Baldwin appears to be the first to provide a lamp in which the necessary air-vent performs also the functions of a burner to consume the excess of gas when the generation is from any cause too rapid. Others have employed excess burners, it is true, but *none has combined these two necessary elements in one* and so constructed and combined the reservoir, the carbide receptacle and the water supply duct as to enable the vent to perform both functions. If the Examiner is of the contrary opinion he is requested to apply the references and point out wherein they disclose

[*Words and figures enclosed in brackets erased in copy.]

the invention of the claims. Applicant's structure is safe, economical in manufacture, and above all simple. The complicated passages, pressure chambers, valves, etc., used by the alleged
 253 anticipating patentees are almost absurd when compared with the simplicity and effectiveness of applicant's lamp.

The objection to claims 1, 2 and 6 on the ground that the flow of water is not "predetermined" does not seem to be well taken. The flow is predetermined. To stick any wire, haphazard, into the duct would certainly not effect the results desired. *Experiment will easily show what size of wire to employ with a given duct, and thereafter the size of the wire is constant, and a thousand lamps may be as readily supplied therewith as one.*

Nor is claim 8 a mere aggregation. The elements recited therein all combine to render the operation of the lamp more constant and regular. The restricting wire modifies the function of the auxiliary burner by keeping to a minimum the quantity of excess gas that must be got rid of. And certainly an air vent must be provided or there can be no flow of water to the carbide.

The Office Draftsman has been directed to apply reference letters to the drawing as requested.

The application being therefore in proper form it is requested that the same be passed to issue at an early date.

Respectfully submitted,

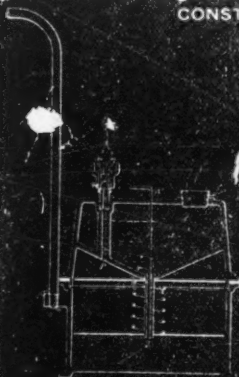
KERR, PAGE & COOPER.

254 COUNTY OF NEW YORK,
State of New York, ss:

Frederic E. Baldwin, being duly sworn, deposes and says that he is the same Frederic E. Baldwin whose application for letters patent, Serial No. 165,587, for Acetylene Lamp, was filed in the United States Patent Office on or about July 15, 1903; that he completed the invention set forth in *claims 1, 2 and 6 of said application in the United States on or before the 7th day of August, 1901*; that the annexed exhibit A entitled "Construction and Operation" shows and describes the construction of a lamp which is made on or before the 7th day of August, 1901; in this lamp, as in the exhibit, *the tube leading from the water reservoir to the carbide receptacle was nearly closed by a wire so that only a predetermined quantity of water sufficient for normal operation could flow through the tube into the carbide receptacle*; that the lamp which he made was successfully operated on or before the 7th day of August, 1901; *that on or before the same date he also made and successfully operated other lamps of the same construction as that shown in Exhibit A, but having in addition a valve carried by the restricting wire and cooperating with the upper end of the water tube as a valve seat to cut off the water supply at will*; that the latter construction, which was embodied in the lamps mentioned is shown in the annexed sketch marked "*Exhibit B*"; that he does not know and does not believe that the invention has been in public use or on sale in this country or patented or described in a printed publication in this or any foreign country for

#323
Albercombi Fitch Co.
Baldwin } $\phi 256$

CONSTRUCTION AND OPERATION.



The lamps are made of cast iron so as to be practically indestructible, and are composed of two parts, as shown by the sectional cut. **Baldwin carbide** is placed in the lower half with the spring plates pressing on it to keep the carbide in place, should the lamp fall over. The top is then put on, resting on a rubber gasket (C) and is clamped to the lower half by screwing up the wing nuts on the sides, making a perfectly gas tight joint. The top half is then filled with water through the large opening on top. Water runs slowly down the central tube to the carbide, where the chemical action takes place, and the acetylene gas is evolved. This gas is then produced, passes up through pipe (E) to the burner, being filtered through a spongy (F) felt under the burner.

A pressure of about 2 1/2 oz. to the square inch is required to provide a proper supply at the burner. The tube through which the water falls is heavily (G) led by a wire, and is so arranged that at the gas pressure is greater or less in the gas chamber, the flow of water is automatically controlled thereby, according to the requirements of the

burner. If for some cause the gas pressure rises above 10 to the square inch, this pressure cuts off the water entirely, the gas chamber expands, water tube, which then acts as a safety valve, holds back the water till the pressure becomes normal.

As the lamp burns the used up carbide cakes around the water tube, acting as a sponge, and gives an even distribution of the water. After about an hour's burning, should this sponge become too compact, it may be broken by rotating the lamp, which runs down the water tube.

The lamps are so constructed they may fall on their sides or roll over without causing any trouble or extinguishing the light. The iron body can also be turned around if the lamp is to be hung up.

CALCIUM CARBIDE.

Only our specially prepared **Baldwin Carbide** should be used in these lamps. This carbide is a free flowing coarse crystalline material. It is made in New York, or with freight added, about 25 cents per lb. at the time of writing. It is sold in various packages of 25 lbs., 50 lbs., and 100 lbs. casks.

BALDWIN CARBIDE, SPECIALLY PREPARED

2 1/2 in. dia. 7 1/2 in. high. 1 lb. cask. New York.

5 1/2 in. dia. 15 in. high. 5 lb. cask.

10 1/2 in. dia. 30 in. high. 25 lb. cask.

15 1/2 in. dia. 45 in. high. 50 lb. cask.

20 1/2 in. dia. 60 in. high. 100 lb. cask.

The New York office, with a full line of supplies, is at 100 West 23rd St., New York. The New York office is also the only place where the Baldwin Carbide is sold. The New York office is also the only place where the Baldwin Carbide is sold.

Exhibitor



#323

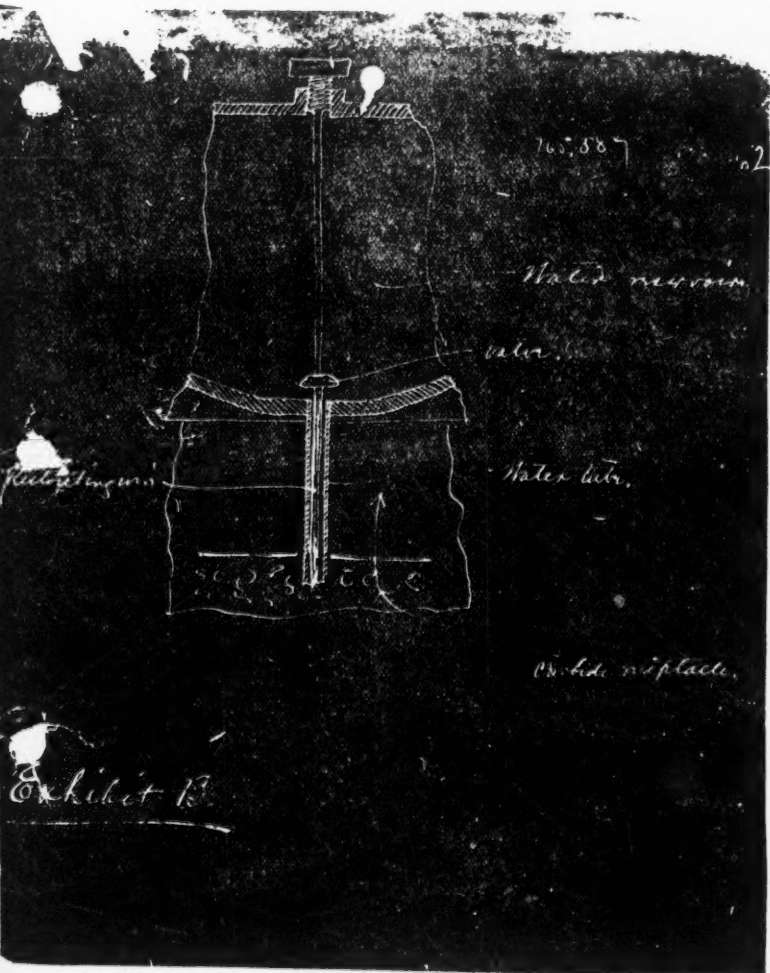
Abercrombie & Fitch Co.

v

Baldwin

257

\$257





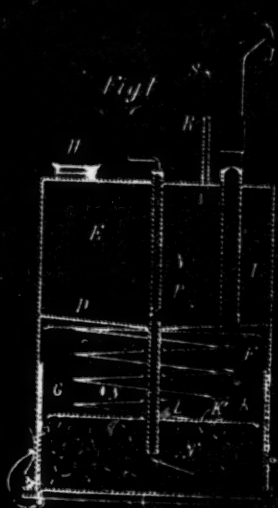


Fig 1

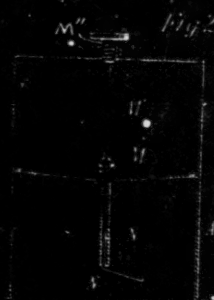


Fig 2

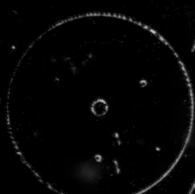


Fig 4

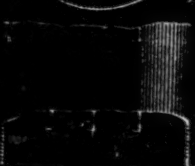


Fig 5

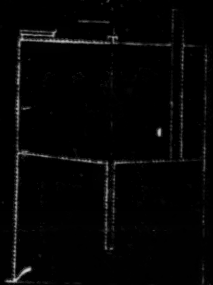


Fig 3

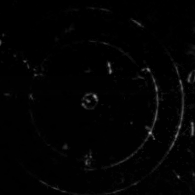


Fig 6

Witnesses

Frederic S. Baldwin Inventor

John C. Fitch

#323
 Abercrombie & Fitch Co } p 258
 M.
 Baldwin

POOR COPY



more than two years prior to this application above mentioned; and that he has never abandoned the invention.

F. E. BALDWIN.

255 Subscribed and sworn to before me this 26th day of December, 1903.

[SEAL.]

FREDERIC E. BALDWIN.
M. LAWSON DYER,
Notary Public (76), N. Y. Co., N. Y.

(Here follow diagrams marked pages 256 to 259, inclusive.)

Account.

SINGER BUILDING, 149 BROADWAY,
NEW YORK CITY, February 17th, 1904.

Hon. Commissioner of Patents, Washington, D. C.

SIR: In the application of F. E. Baldwin, Room 169, filed July 15th, 1903, Serial No. 165,587, for Acetylene Lamps, please have the Office Draftsman make the following corrections in the drawings:

Add reference letters K' and M'' as indicated in red ink on the annexed print.

Charge cost to our deposit account.

Respectfully,

KERR, PAGE & COOPER.

[Endorsed:] Kerr, Page & Cooper. C. U. S. Patent Office. Number 33,125. Received Feb. 18, 1904. Chief Clerk. Rec'd in Div. C Feb. 18, 1904. Dr'w'g corrected and to Exam'r Feb. 23/04. No Charge. Forward to mail room for Div. 31, Feb. 23/04. Mail Room. Transfer to Div. 31, 2-25-'04.

Div. 31, -om 169.

Address only "The Commissioner of Patents, Washington, D. C.," and not any official by name.

Paper No. 3.

All communications respecting this application should give the serial number, date of filing, title of invention, and name of the applicant.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
WASHINGTON, D. C., March 8, 1904.
Mailed " " "

Frederic E. Baldwin, care of Kerr, Page and Cooper, 149 Broadway,
New York, N. Y.:

Please find below a communication from the Examiner in charge
your
of [the]* application [of]* No. 165,587. Acetylene Lamps. Filed
July 15, 1903.

F. I. ALLEN,
[THOMAS EWING,]*
Commissioner of Patents.

[*Words and figures enclosed in brackets erased in copy.]

The above case has been reconsidered in view of amendment of Feb. 18, 1904.

Claims 1, 2, 6 are each again rejected upon the patents of *record thereto minus Van Pragg*.

Claim 7 is again rejected upon the patents thereto. Furthermore applicant has simply provided the usual vent, such as shown in his former patent, with a burner whereby the excess gas may be burned instead of escaping to the external air. To burn this gas is old as shown by Gobron and others and by patent 614,439, Buffington, Nov. 22, 1898, (Holders. High pressure Safety escape).

Claims 3, 4, 5, 8 may issue.

ELY, *Ex.*

STOKES.

262 Mail Room,
Mar. 7, 1905,
U. S. Patent Office.

U. S. Patent Office,
Received Mar. 8, 1905,
Division 31.

Serial No. 165,587, Paper No. 4.

B.

Division 31, Room 169.

Application of F. E. Baldwin. Serial No. 165,587. Filed July 15, 1903. Acetylene Lamps.

NEW YORK, March 6th, 1905.

Hon. Commissioner of Patents.

SIR: In the above entitled application we amend as follows:

✓*Cancel claims 1, 2 and 6.*

Renumber the remaining claims.

Remarks.

Reconsideration of original claim 7 is requested. Gobron and Buffington, of record, do not show devices in which the *auxiliary burner* supplies air to the water chamber during the normal operation of the lamp, nor do the patentees' structures appear to be adapted to perform such function. This feature is clearly brought out in claim 1 and the same is therefore thought to be allowable.

Respectfully submitted,

KERR, PAGE & COOPER.

— -1, R-m 169.

Address only "The Commissioner of Patents, Washington, D. C.,"
and not any official by name.

Paper No. —.

All communications respecting this application should give the
serial number, date of filing, title of invention, and name of the
applicant.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
WASHINGTON, D. C., March 28, 1905.
Mailed " " "

Frederic E. Baldwin, care of Kerr, Page and Cooper, 149 Broadway,
New York, N. Y.:

Please find below a communication from the Examiner in charge
your
of [the]* application [of]* No. 165,587. Acetylene Lamps. Filed
July 15, 1903.

F. I. ALLEN,
[THOMAS EWING,]*
Commissioner of Patents.

The above case has been reconsidered in view of amendment of
March 7, 1905.

Claim 4 (original 7) is again and finally rejected upon the patents
of record thereto.

G. S. ELY, *Examiner.*

STOKES.

264 U. S. Patent Office,
Received Jan. 18, 1906,
Division 31.

Serial No. 165,587, Paper No. 6.

Asso. Power of Att'y.

Div. 31, Room 169.

Application of F. E. Baldwin. Serial No. 165,587. Filed July 15,
1903. Acetylene Lamp.

NEW YORK, January 17, 1906.

Hon. Commissioner of Patents.

SIR: In the above entitled application we hereby appoint Messrs.

[*Words and figures enclosed in brackets erased in copy.]

Hall & Heylmun, 1003 F Street, N. W., Washington, D. C., our
associate attorneys, with full power in the premises.

Respectfully,

KERR, PAGE & COOPER.

265 Mail Room,
Mar. 12, 1906,
U. S. Patent Office.

U. S. Patent Office,
Received Mar. 12, 1906,
Division 31.

Serial No. 165,587, Paper No. 7.

C.

Division 31, Room 169.

Application of F. E. Baldwin. Serial No. 165,587. Filed July
15th, 1903. Acetylene Lamp.

NEW YORK, March 6th, 1906.

Hon. Commissioner of Patents.

SIR: In the above entitled application we amend as follows:
√Claim 1, (original 3) line 3, after
Kerr, Page & Cooper. "former" insert:—(*a considerable dis-
tance.*)

Cancel claim 4, and insert:

C'. 4. In a lamp of the kind described, the combination with
a water reservoir, and a receptacle for calcium carbide, of a
a considerable distance

Kerr, Page & Cooper. water tube extending from the
former into the latter and adapted
to be embedded in the mass of carbide in the receptacle, and
a rod extending through the water tube and *constituting a
stirrer* to break up slaked carbide around the outlet of the
water tube, as set forth.

Remarks.

In connection with the above claim our attention has been called
to several prior patents, of more or less relevancy.

No. 704,272, July 8, 1902, to Riesberg: This patent shows an ap-
paratus for making carbonic acid, by the usual method of treating
marble dust with sulfuric acid. The carbonate or marble dust is
contained in a receptacle, above which is a small vessel for the acid,
the latter being delivered through a tube. Around the tube is an
outer pipe or tube *d*, at the bottom of which are blades *d'*, embedded
in the marble dust, so that the same will be agitated by the
rotation of the outer

[Folio 266 is missing.—PRINTER.]

267 is so constructed that depressing the same will permit the escape of an abnormal quantity of water, to receive the flame if the generation of gas should fall off. At first sight this construction appears to answer the terms of the claim, but a more careful consideration proves the contrary. In the first place, Williams' water tube is *not* adapted to be embedded in the carbide. This deduction follows necessarily from the operation of the lamp as described by the patentee. As already stated, the effect of the rod or wire is to restrict the flow of water to a predetermined rate. For example, the rate for a gas consumption of $\frac{1}{4}$ cu. ft. per hour would be, say, 20 drops per minute. As the head of water in the reservoir diminishes, and this, in conjunction with the gas pressure in the carbide receptacle, would make the flow of water slower and slower, so that soon the flame would dim and become smoky. If in addition the slaked carbide should swell up so as to embed the end of the water tube the mass would so clog the orifice as to reduce the flame still more, if not extinguish it altogether. In other words the water tube in the patentee's lamp is *not adapted to be embedded in the carbide*.

In applicant's lamp the flow of water is so regulated that when the tube is embedded in the carbide the pressure of the water column is sufficient to overcome the clogging effect of the spent material collecting around the outlet, with the result that the discharge will then be at the proper rate. As the water level in the tank becomes lower the pressure in the tube becomes correspondingly less. But carbide has a great affinity for water, and with the outlet of the tube embedded in carbide the latter seems actually to draw the water
268 out of the tube. Furthermore, as the water-soaked lime or spent carbide accumulates around the water outlet it operates to reduce the effect of the gas pressure tending to prevent outflow of the water, so that while the accumulation of ash around the tube may tend to diminish the flow, the gas pressure which theretofore had the same effect is lessened. The reduction of the latter substantially balances the increase in the other, and the result is that applicant's lamp, which is extensively used, burns as brightly at the end of a change as at the beginning.

It will therefore be seen that the references mentioned contain *no disclosure of a water tube adapted to be embedded in the carbide, and combined therewith a rod or stirrer for breaking up the slaked carbide around the water outlet*; and since the above claim appears to be clearly allowable it is thought that it may be fairly admitted. If the Office be of *contrary opinion* it is requested that this amendment be entered for purposes of appeal, in which case the appeal could be taken before the 28th of March, 1906, so that the admission of the amendment would not operate to delay final determination of the case.

Respectfully submitted,

KERR, PAGE & COOPER.

No appeal taken.

269

2-260.

Div. 31, -m 169.

Address only "The Commissioner of Patents, Washington, D. C.,"
and not any official by name.

Paper No. —.

All communications respecting this application should give the
serial number, date of filing, title of invention, and name of the
applicant.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
WASHINGTON, D. C., March 15, 1906.
Mailed " " "

Frederic E. Baldwin, care of Hall and Heylman, 1003 F Street
N. W., Washington, D. C.:

Please find below a communication from the Examiner in charge
your
of [the]* application [of]* No. 165,587. Acetylene Lamps. Filed
July 15, 1903.

F. I. ALLEN,
[THOMAS EWING,]*
Commissioner of Patents.

This case has been reconsidered in view of the amendment filed
March 12, 1906. Upon reconsidering this case it is found that Fig-
ure 7 sheet 2 of the drawings and the corresponding descriptive mat-
ter of the specification is not relevant to the invention covered by the
claims and should be cancelled. When the case is amended in this
respect, and as at present advised, the claims may issue.

ELY, *Examiner.*

STOKES.

270 Mail Room,
Apr. 2, 1906,
U. S. Patent Office.

U. S. Patent Office,
Received Apr. 6, 1906,
Division 31.

Serial No. 165,587, Paper No. 9.

D.

In the United States Patent Office.

Application of Frederic E. Baldwin. Acetylene Lamps. Filed
July 15, 1903. Ser. No. 165,587.

Hon. Commissioner of Patents, Washington, D. C.

SIR: ✓ On page 1, cancel the brief description of *figure 7* of the
drawings.

[*Words and figures enclosed in brackets erased in copy.]

✓On page 5, cancel the matter beginning with line 5 and extending to the end of the page.

✓On page 6, cancel the matter embraced in lines 1 to 10 inclusive.

✓Cancel figure 7 of the drawings.

Remarks.

The above amendments are made in response to the official communication of March 15, 1906 and the case is now thought to be in condition for allowance.

Respectfully submitted,

FREDERIC E. BALDWIN,
By HALL & HEYLMUN, *Attorneys.*

Washington, D. C., March 29, 1906.

271

Serial No. 165,587.

Issue Division.

A. R.

All communications should be addressed to "The Commissioner of Patents, Washington, D. C."

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
WASHINGTON, D. C., April 12, 1906.

Frederic E. Baldwin, c/o Hall & Heylmun, City.

SIR: Your application for a patent for an improvement in Acetylene Gas Generating Lamps filed July 15, 1903, has been examined and allowed.

The final fee, twenty dollars, must be paid, and the Letters Patent bear date as of a day not later than six months from the time of this present notice of allowance.

If the final fee is not paid within that period the patent will be withheld, and your only relief will be by a renewal of the application, with additional fees, under the provisions of Section 4897, Revised Statutes. The office aims to deliver patents upon the day of their date, and on which their term begins to run; but to do this properly applicants will be expected to pay their final fees at least twenty days prior to the conclusion of the six months allowed them by law. The printing, photolithographing, and engrossing of the several patent parts, preparatory to final signing and sealing, will consume the intervening time, and such work will not be done until after payment of the necessary fees.

When you send the final fee you will also send, distinctly and plainly written, the name of the inventor and title of invention as above given, date of allowance (which is the date of this circular), date of filing, and, if assigned, the names of the assignees.

If you desire to have the patent issue to assignees, an assignment containing a request to that effect, together with the fee for recording

the same, must be filed in this office on or before the date of payment of final fee.

After issue of the patent uncertified copies of the drawings and specifications may be purchased at the price of five cents each. The money should accompany the order. Postage stamps will not be received.

Respectfully,

F. I. ALLEN,
Commissioner of Patents.

After allowance, and prior to payment of the final fee, applicants should carefully scrutinize the description to see that their statements and language are correct, as mistakes not incurred through the fault of the office, and not affording legal grounds for reissues, will not be corrected after the delivery of the letters patent to the patentee or his agent.

[On left margin:] In remitting the final fee give the serial number at the head of this notice.

[On right margin:] If payment is made by check or draft, the credit allowed is subject to the collection of the same.

272 \$20, C'k, Received May 3, 1906. S. Chief Clerk, U. S. Patent Office.

NEW YORK CITY, May 2, 1906.

Hon. Commissioner of Patents, Washington, D. C.

SIR: We enclose herewith check to your order for \$20 00/100 to be applied in payment of final fee in the application for Letters Patent named below:

Frederic E. Baldwin, for improvements in Acetylene Lamps. Filed July 15, 1906. Serial No. 165,587. Allowed April 12, 1906.

In case the above is for the payment of a *First Fee*, please make three copies of the drawings in the application, place one copy in the file and send two to us, charging same to our deposit account.

Respectfully,

KERR, PATE & COOPER.
M.

273 2-191.

Serial No. 165,587.

J. M. H.

Issue Division.

Address only "The Commissioner of Patents, Washington, D. C."

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
WASHINGTON, D. C., May 3, 1906.

Frederic E. Baldwin, c/o Kerr, Page & Cooper, 149 Broadway, New York, N. Y.

SIR: You are informed that the final fee of twenty dollars has

been received in your application for Improvement in Acetylene Gas Generating Lamps.

[Date of receipt.]*

Very respectfully,

F. I. ALLEN,
[E. B. MOORE,]*
Commissioner of Patents.

275

United States Patent Office.

Frederic E. Baldwin, of New York, N. Y.

Acetylene-gas-generating Lamp.

No. 821,580.

Patented May 22, 1906.

Specification of Letters Patent.

Application Filed July 15, 1903. Serial No. 165,587.

Reissued.

To all whom it may concern:

Be it known that I, Frederic E. Baldwin, a citizen of the United States, residing at New Brighton, in the city of New York, county Richmond, and State of New York, have invented certain new and useful Improvements in Acetylene-Lamps, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

(Here follows diagram marked page 274.)

The invention upon which is based the present application for Letters Patent is a lamp designed to generate and burn acetylene or similar gas, and is an improvement on the form described and shown in a patent granted to me August 28, 1900, No. 656,874. Like the lamps of said patent, that of the present application is intended for use and adapted to use as a bicycle, automobile, yacht, or mine lamp or for any other analogous purpose, it being necessary only to change its form or dimensions to adapt it to any one of the purposes mentioned.

[*Words and figures enclosed in brackets erased in copy.]

F. E. BALDWIN.
ACETYLENE GAS GENERATING LAMP.
APPLICATION FILED JULY 19, 1903.

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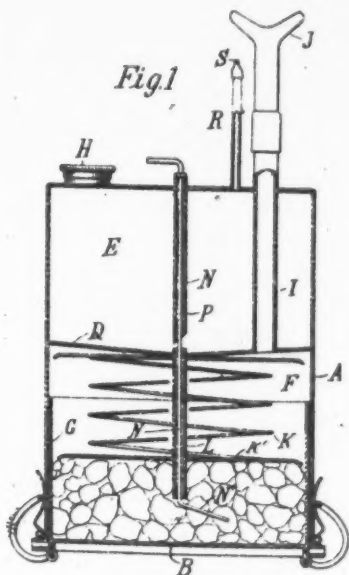


Fig. 1

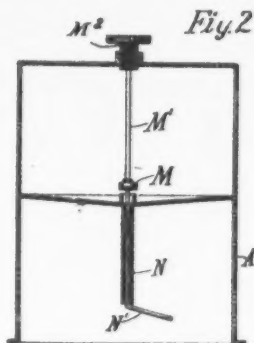


Fig. 2

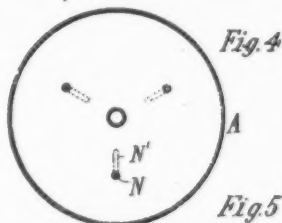


Fig. 4

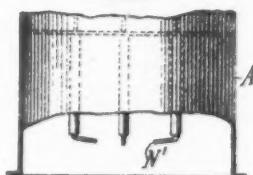


Fig. 5

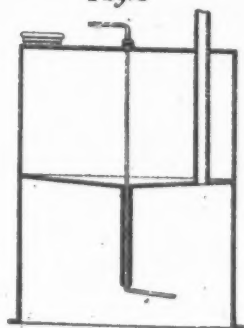


Fig. 3

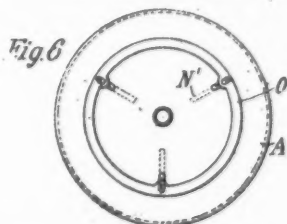


Fig. 6

Witnesses:

Thos. J. Byrnes

Ed. Dunham

323.

Fredric E. Baldwin Inventor

by Kerr, Page & Cooper Attys

Abercrombie & Fitch Co.

V.

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In the drawings hereto annexed, Figure 1 is a central vertical section of the complete lamp. Fig. 2 is a similar view of a portion of the lamp, exhibiting a modification. Fig. 3 is a similar view of a further modification. Figs. 4, 5 and 6 are details of parts of the lamp, showing another modification.

The features of novelty which characterize my present invention reside in details of construction and will be pointed out in the course of the following description of the devices illustrated in the drawings and the manner of using the same, and more particularly specified in the subjoined claims.

Generally considered, the lamp is one comprising a metallic or other receptacle A, preferably provided with a bottom B, which may be readily detached and which when the lamp is in use is held firmly in position by suitable clamps C, so as to make a water and gas tight closure.

The receptacle is divided, preferably horizontally, by a partition D into two compartments, the upper one, E, designed to serve as a water-chamber or reservoir, the lower, F, as a gas-generating chamber adapted to contain a receptacle G for calcium carbid, which is generally attached to or forms the detachable bottom.

In the top of the lamp is an orifice closed by a screw-cap H or similar device for the introduction of water to the reservoir, and from the gas-generating chamber F through the water-reservoir E and out through the top of the lamp extends a tube I, which conducts the gas to the burner J.

I proceed now to a detailed description of the features enumerated above, which I have devised as improvements in lamps of the general character above described.

The means for effecting and controlling the generation of gas.—A quantity of calcium carbid, preferably in a finely-divided condition, is placed in the receptacle G and retained by any suitable device, such as a spiral spring K, interposed between the bottom of the water-reservoir E and a loosely fitting or perforated plate K', care being taken to adjust the tension of the spring so that the proper degree of pressure will be exerted upon the mass of carbid. A tube L leads from the water-reservoir down into the receptacle G and forms a duct which introduces the water into the body of carbid which said receptacle is designed to contain.

Various means have been employed to regulate or control the normal rate of flow of water through a water-supply tube. For example, the bore of the tube has been made of small diameter; but this plan has not been found practical for various reasons. In the first place, the discharge-outlet thereof is under pressure of several inches of water, and it is practically impossible to make the bore so minute that the water will issue in sufficiently small quantity. If the attempt is made to secure this small flow by making the tube very minute, it then becomes so easily clogged that the operation of the lamp is rendered extremely uncertain. The smallest particle of foreign matter in the water or a bit of slaked carbid carried into the bore by back pressure of the gas will stop the flow completely, and the lamp will go out. Such a tube is also difficult, in fact almost im-

possible, to clean. Another method which has been employed is to use a duct of comparatively large bore and fill the same with a wick of more or less loose texture for the purpose of checking the supply. This for a time operates with some degree of success, though from the very nature of the material used the precise amount of the feed can never be exactly determined. A valve is generally necessary to regulate the supply. Furthermore, when the lamp has been used for a time the wick, which of course must act as a strainer, becomes filled with solid matter—such as sand, dirt, and organic particles contained in the water—so that the feed is reduced. This necessitates frequent adjustment of the valve to restore the proper supply. In time the wick becomes completely choked, and the user, often unskilful in such matters, must tamper with the lamp and insert a new wick, which is at best a troublesome procedure. Again, if the lamp has not been used for some time the wick dries out, and a very appreciable time is required to soak it up so that the water will again flow through.

The method which I have invented for securing the proper feed under all circumstances without the above objectionable features is to make the bore of the duct of comparatively large size and then restrict it by means of a wire or rod preferably centrally located therein to leave a channel of the proper size. This arrangement is simple; but in a long experience it has been found to be entirely successful. It is possible to secure the correct drop-by-drop feed with a duct of considerable size, since the friction of the water on the large area of the tube-wall and wire reduces its flow. *This retarding-friction may be regulated by varying the size of wire used.* The duct does not become choked, since if foreign particles are deposited therein the water can take a zigzag course around it without the supply being appreciably affected. If it is at any time necessary to clean the tube, the wire is simply reciprocated and rotated a few times from the outside of the lamp without disturbing the position of other parts. This nice regulation of the flow enables me to entirely dispense with the troublesome adjustment of the valve. If a valve is used at all, it is employed to shut off the flow entirely and not to regulate it. The construction just described is shown in Fig. 1, in which L is the water-supply tube, and N the constricting-wire. In this illustration the size of the parts is of course exaggerated. Fig. 2 shows a similar construction with a valve M on the constricting wire, which may be set by turning the screw-plug M' in the top of the lamp. In some cases, however, there is employed in connection with the means for introducing the water into the mass of carbid a device in the nature of a stirrer, which on proper manipulation may be used to break up the mass of carbid surrounding the outlet of the water-duct and which by having become slaked and caked by the action of water prevents the proper percolation of the latter to the unslaked carbid in the receptacle G, Fig. 1. As such device I employ a stem or rod N, which extends down through the tube L and is bent at substantially right angles to form an arm N'. This rod may form a prolongation of the valve-stem M' of Fig. 2 or in case no valve is

used may extend from the top of the lamp down through the water-reservoir, as shown in Fig. 3.

As calcium carbide possesses strongly absorptive properties, the introduction of water through the tube L will result in the gradual slaking of the material about its outlet; but the lime thus produced becomes gradually less permeable to the water, so that an insufficient quantity of gas is generated to maintain the proper flame. When this becomes noticeable, the rod N is turned, so as to cause the arm N' to break up to a greater or less extent the mass of lime, and in practice I have found that under ordinary conditions this is amply sufficient to insure a substantially uniform generation of gas until all of the carbide in the receptacle G is exhausted.

In the larger-sized lamps it is desirable to employ two or more water-tubes L and, if desired, stirring-rods N, extending down to different points in the carbide-receptacle. This is indicated in Fig. 4, which is an under plan view of the bottom D of the water-reservoir, showing three water-tubes L in section. It is, however, desirable when a plurality of stirring-rods are employed that some means be provided for actuating all of them simultaneously. A device suitable for this purpose is shown in Fig. 6, in which O is a ring placed on top of the lamp, with which bent ends of all the rods N engage, so that a partial rotation of the ring will impart a corresponding movement to each rod.

The means for consuming an excess of gas.—Although the means described above effect a remarkably uniform generation of gas, it sometimes occurs that an amount of gas in excess of that required for the burner is temporarily produced, and the usual plan is to provide some channel for its escape into the air. When the lamps are used in confined places, however, this method of disposing of the unconsumed gas is objectionable, owing to its very disagreeable odor. To remedy this, I provide a channel of escape, which terminates in the immediate vicinity of the burner proper, so that any excess of gas which may issue will be ignited by the flame of the burner and consumed. This may be accomplished in various ways; but the most practical of which I am at present aware is that shown in Fig. 1. In this figure there is shown a tube P, which extends downward from the top of the lamp to a point near the orifice of the water-tube L in the lower part of the water-reservoir E. The rod N extends through this tube without leaving sufficient space for passage of escaping gas. The air to replace the water which flows into the carbide-chamber enters through the burner and tube hereinafter described. When more gas is generated than is carried off by the burner-tube, it forces the water up through the tube L and enters the water-reservoir. Practically none of the gas will find its way up the tube P under any circumstances, but rising to the upper part of the reservoir E it escapes through a tube R, provided with a vent S of such character as to constitute a burner and in such close proximity to the main burner J that any gas issuing through it will be ignited by the flame of the latter and burned.

The specific construction of the various parts of my lamp may be,

as will be seen from a consideration of the nature of the improvements, very greatly varied without departing from the invention.

What I claim is—

1. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a tube extending from the former a considerable distance into the latter so as to be embedded in the mass of carbid contained in said receptacle, and a rod or stem extending through said tube into the carbid-receptacle and having its end formed as a stirrer to break up the slaked carbid around the outlet of the water-tube, as set forth.

2. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a tube extending from the former into the latter so as to be embedded in the mass of carbid contained in the receptacle, a rod extending from a point outside of the lamp through the tube and into the carbid-chamber and having its end bent to form a stirrer for breaking up the slaked carbid around the outlet of the water-tube, as set forth.

3. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a plurality of tubes extending from the former into the latter so as to be embedded in the mass of carbid contained in the receptacle, a stirrer passing through each tube adapted to break up the slaked carbid around the end of the tube, and means for actuating all the stirrers simultaneously, as set forth.

4. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water-tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water-tube and constituting a stirrer to break up slaked carbid around the outlet of the water-tube, as set forth.

5. In a lamp of the kind described, the combination with a water-reservoir, a carbid-receptacle, and a tube restricted by a wire extending into the carbid-receptacle from outside the lamp and open to the water-reservoir, a tube exterior to the lamp, connected with the reservoir and adjacent to the main burner, and equipped with a burner, said auxiliary burner acting as an air-vent to admit air during the normal operation of the lamp.

FREDERIC E. BALDWIN.

Witnesses:

N. LAWSON DYER.
S. S. DUNHAM.

277

1903.

Contents.

- Pri.t. 2 sheets, July 29, 1903. 5 [8]* Cls.
- 1/2. Application. — papers. Cls.
1. Reject'n, Aug. 15, 1903.
2. Amend't A, affidavit, and sketch, Feb. 18, 1904.
3. Reject'n, M'ch 8, 1904.
- √4. Amend't B, March 7, 1905.
- √5. Reject'n Fi., M'ch 28, 1905.
6. Asso. power of att'y, Jan. 18, 1906.
7. Amend't C, M'ch 12, 1906.
- √8. Letter, March 15, 1906.
- √9. Amend't D, Apr. 2, 1906.

Title: Improvement in Acetylene Gas Generating Lamps.

278 United States Circuit Court of Appeals for the Second Circuit,
October Term, 1915.

No. 26.

Argued October 7, 1915; Decided November 9, 1915.

FREDERICK E. BALDWIN and JOHN SIMMONS COMPANY,
Complainants-Appellees,
against

ABERCROMBIE & FITCH COMPANY and JUSTRITE MANUFACTURING
COMPANY, Defendants-Appellant.

Appeal from the District Court of the United States for the Southern
District of New York.

Before Lacombe, Coxe and Rogers, Circuit Judges.

James Q. Rice, of Counsel for Complainants;
James R. Offield and Charles K. Offield, Solicitors and of Counsel
for Defendants.

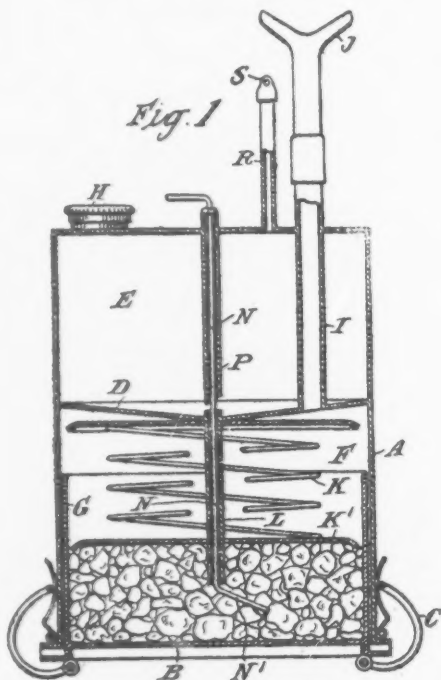
This cause comes here on appeal from the decree of the United States District Court for the Southern District of New York entered on February 10, 1915, holding valid and infringed claim four of the reissue patent No. 13,542, issued to Frederick E. Baldwin on March 11, 1913.

The invention covered by this patent is for a lamp designed to generate and burn acetylene or similar gas. It is intended for use as a bicycle, automobile, yacht or miner's lamp, but its commercial utility has been principally in connection with miner's cap lamps. The invention is shown in the following drawing.

[*Words and figures enclosed in brackets erased in copy.]

Fig. I.

Patent No. 13542.



The specification describes the lamp as follows:

"Generally considered, the lamp is one comprising a metallic or other receptacle A, preferably provided with a bottom B, which may be readily detached and which when the lamp is in use is held firmly in position by suitable clamps C, so as to make a water and gas tight closure.

The receptacle is divided, preferably horizontally, by a partition D into two compartments, the upper one E, designed to serve
 280 as a water-chamber or reservoir, the lower F, as a gas-generating chamber adapted to contain a receptacle G for calcium carbid, which is generally attached to or forms the detachable bottom.

In the top of the lamp is an orifice closed by a screw cap H or similar device for the introduction of water to the reservoir, and from the gas-generating chamber F through the water-reservoir E and out through the top of the lamp extends a tube I, which conducts the gas to the burner J."

The Complainants relied solely upon claim four, which reads as follows:

"In a lamp of the kind described, the combination with a water-

reservoir, and a receptacle for calcium carbid, of a water tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water tube, and constituting a stirrer to break up slaked carbid around the outlet of the water tube, the rod operating to restrict and thus control the flow of water to the carbid, as set forth."

The John Simmon Company intervened in the suit, became a complainant and alleged that it was a corporation organized and existing under the laws of the State of New York; that it had its principal place of business in the Borough of Manhattan in said State; that it was the only manufacturer of the inventions of the plaintiff Baldwin and that unless it was allowed to intervene it would necessitate the beginning of a new action for the recovery of damages and profits; that in 1908 an arrangement was made between it and Baldwin whereby the former manufactured the lamps while both parties sold them; that in 1911 a new contract was made under which it acquired the exclusive right to manufacture and sell the lamps.

The Abercrombie & Fitch Company of the Borough of Manhattan and State of New York, was the original defendant and sold the lamps alleged to infringe.

The Justrite Manufacturing Company of Chicago, Illinois, 281 was the manufacturer of the lamps sold by the Abercrombie & Fitch Company, and intervened under Federal Equity Rule No. 37, which provides that any person may be made defendant who has or claims an interest adverse to the plaintiff.

The amended answer of the Justrite Manufacturing Company denied that the plaintiff Baldwin was the original, sole and first inventor of the alleged improvement claimed by him in his Letters Patent; averred that the said improvement was null and void for want of utility as well as for want of invention on the part of Baldwin; denied that the same had been in public use or on sale for more than two years prior to the application for the patent; denied the fact of infringement; averred that the principle of the alleged invention was not new but had been fully described in Letters Patent both of the United States and of foreign countries long prior to the application made by the plaintiff Baldwin for his patent, and averred that the reissue patent No. 13,542 was invalid.

The testimony was taken in open court and a decree entered holding Reissue Letters Patent, No. 13,542 to be valid as to claim four; that defendants had infringed; that plaintiff recover the profits which defendants derived from their infringement; that a perpetual injunction issue, and that the injunction granted be suspended pending appeal if appeal be promptly taken. It was also decreed that plaintiffs recover their costs and disbursements.

ROGERS, *Circuit Judge* (after stating the above facts):

United States patent No. 656,874 was issued to Frederick E. Baldwin on August 28, 1900, for an acetylene gas generating lamp; and

letters patent No. 821,580 was issued to him on May 22, 1906, for an improvement on the form described in No. 656,874; and reissued letters patent No. 13,542 was issued to him on March 11, 1913, and is the patent in suit.

Patents No. 656,874 and No. 821,580 came before the Circuit Court for the Southern District of Illinois in a suit brought by Baldwin who claimed his patents were infringed by the lamp of the Bleser patent, No. 949,349. The Court sustained Baldwin's
282 claims and the case was appealed to the Circuit Court of Appeals for the Seventh Circuit which affirmed in part and reversed in part. The court decided that patent No. 656,874 was valid and claim one infringed by the Bleser patent, but held claims two, three, four, five, six and ten not infringed. Patent No. 821,580 was held valid but not infringed. It declared that in view of the prior art patent No. 656,874 was not entitled to a broad construction with reference to equivalents. *Bleser v. Baldwin*, 199 Fed., 133 (1912).

The above decision was handed down on April 23, 1912, and Baldwin on February 3, 1913, filed his application for the reissued patent No. 13,342. The latter patent then came before the District Court for the Western District of Pennsylvania and was held valid and infringed. The case was then taken on appeal to the Circuit Court of Appeals for the Third Circuit and that court held claim four of the reissue patent void. The Court thought claim four of the reissue patent broader than that of the original patent and said that a reissue patent could not be allowed to broaden an original patent after the lapse of so long a time as seven years and after the original patent had been limited by final adjudication.

In the suit now before us this same claim four of the reissue patent is the claim involved. The court below has held it valid and infringed. Its opinion conflicts with the decision in the Third Circuit.

This court appreciates that uniformity is desirable in decisions respecting the validity of patents and is disposed in all doubtful cases to conform to a decision rendered in another Circuit. But in a case in which this court is convinced that the conclusion reached was wrong it is not at liberty to surrender its own judgment upon the issue involved in order that uniformity may be secured. In *Mast, Foos & Company v. Stover Manufacturing Company*, 177 U. S., 485 (1900), Mr. Justice Brown said:

283 "Comity persuades; but it does not command. It declares not how a case shall be decided, but how it may with propriety be decided. It recognizes the fact that the primary duty of every court is to dispose of cases according to law and the facts; in a word, to decide them right. In doing so, the judge is bound to determine them according to his own convictions. If he be clear in those convictions, he should follow them. It is only in cases where, in his own mind, there may be a doubt as to the soundness of his views that comity comes in play and suggests a uniformity of ruling to avoid confusion, until a higher court has settled the law. It demands of no one that he shall abdicate his individual judgment, but only that deference shall be paid to the judgments of other coordi-

nate tribunals. Clearly it applies only to questions which have been actually decided, and which arose under the same facts."

The plaintiff, Baldwin, first began to market an Acetylene Miner's Cap Lamp in January, 1906. At that time there was no other acetylene cap lamp on the market. Prior to the introduction of the Baldwin lamp miners used oil lamps with a wick, or caudles. In an oil lamp the mining law required the use of a high grade of oil, which cost the miners from 28 to 40 cents a gallon, and a gallon lasted for a week. The Baldwin acetylene lamp resulted in quite a saving to the miners for it could be used for a week at a cost not to exceed 8 cents. The oil lamps too gave off a great deal of smoke which contributed largely to miners' asthma and also consumed a great deal of the oxygen of the air. The Baldwin lamp gave off no smoke and only consumed one-eighth of the oxygen that the oil lamps consumed. Then too the oil lamps had a very large wick, an inch in diameter and rough on the top and in going through windy places with them sparks were often blown off into the timber which was oil soaked and therefore dangerous. And miners were sometimes careless and would throw partly consumed wicks away without putting their foot on them to extinguish them. In preparing powder to blast with the miners often would keep the lamps

284 on their hats, although the law prohibited their doing so and sometimes a spark would fall on the powder and ignite it. It was not an uncommon occurrence for miners to be injured in this way. So that the invention of the plaintiffs' acetylene lamp involved a considerable saving of money to the miners as well as an improvement in their health through better air and gave them protection against explosions and the dangers arising from conflagrations within the mines. It is not surprising therefore to find that over one million of the acetylene lamps of the patent have been sold in the market in the short time that has elapsed since the patent was granted. The Baldwin lamp had merit in it and the inventor accomplished something that was well worth while.

We come now to consider the questions involved.

The Circuit Court of Appeals in the Seventh Circuit held, as before stated, that the original patent was valid including claim four, and the Third Circuit held that claim four was invalidated by the fact that in the reissue it had been broadened. The patentee had amended his specification in two particulars:

1. He described the tube as always embedded in the carbid.
2. He added the following statement:

"It will be understood from what has been said that the function of the stirrer is to break up, pierce or disturb the particles of the slaked carbid mass which, when the lamp is in use, forms at the delivery end of the tube. This slaked carbid mass tends to solidify and either shuts the water off altogether or restricts it so that less water is delivered from the water tube than the lamp demands for efficient operation. As it is sufficient, under certain circumstances to insure the requisite flow of water by so manipulating the stirrer, as to pierce, break up or loosen the slaked carbid mass immediately around or at the mouth of the tube, it is obvious that the stirrer need

not always be formed with a bent end or so as to extend radically from the mouth of the tube."

285 He then amended claim four so as to read:

"In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water-tube, and constituting a stirrer to break up slaked carbid around the outlet of the water tube, *the rod operating to restrict and thus control the flow of water to the carbid, as set forth.*"

The italicized words being the clause inserted.

It will be at once conceded that amendment one is not of importance. The objection to amendment two, as the Third Circuit thought, was that it eliminated the need of a bent arm at the end of the rod used as a stirrer. The Seventh Circuit had held that a rod without a bent arm did not infringe claim four and if that decision was right the Third Circuit was right in regarding the amendment made in the reissue patent as broadening the patent and therefore void. But we are unable to concur in the view taken of the matter in the Seventh Circuit and not concurring in that view we are unable to concur in the view taken in the Third Circuit.

The decision in the Seventh Circuit confined the patentee to a substantially right-angled stirrer while the original claim merely said "constituting a stirrer." The material thing was to stir the sludge and one can stir such a substance as carbid sludge by an up and down motion of a straight rod, though perhaps not as thoroughly as he can by the rotary motion of a bent part. Claim one covers "end formed as a stirrer," which might properly call for something more than a straight end. Claim two covers "end bent to form a stirrer." Claim four has no limitation but speaks merely of the rod as "constituting a stirrer," which, especially in

286 view of the phrasing of the other two claims, may properly be construed as covering a rod of whatever shape (straight or bent) which penetrated into the carbid sufficiently to allow of its being used to stir the same. In that respect it differed from the prior art. It seems to us that the court in the Third Circuit erred in not holding that the "rod extending through the water tube * * * as set forth" was the sort of rod to which the patentee had devoted a whole column of description dealing with prior art, defects and his improvement to avoid them, that is to say a rod of thickness sufficient to regulate flow of water through the tube. It does not follow that because the original patent shows a stirrer having a bent end it is limited to such a stirrer notwithstanding that the patent defines the function the stirrer is to discharge, and notwithstanding that in the lamps in suit a stirrer having a straight end discharges precisely that function.

The Supreme Court laid down the rule in *Machine Company v. Murphy*, 97 U. S. 120, 125 (1877) as follows:

"Except where form is of the essence of the invention it has but

little weight in the decision of such an issue, the correct rule being that, in determining the question of infringement, the court or jury, as the case may be, are not to judge about similarities or differences by the names of things, but are to look at the machines or their several devices or elements, in the light of what they do, or what office or function they perform, and how they perform it, and to find that one thing is substantially the same as another, if it performs substantially the same function in substantially the same way to obtain the same result, always bearing in mind that devices in a patented machine are different in the sense of the patent law when they perform different functions or in a different way, or produce a substantially different result.

Nor is it safe to give much heed to the fact that the corresponding device in two machines organized to accomplish the same
 287 result is different in shape or form the one from the other, as it is necessary in every such investigation to look at the mode of operation or the way the device works, and at the result, as well as at the means by which the result is attained. * * *

Authorities concur that the substantial equivalent of a thing, in the sense of the patent law, is the same as the thing itself; so that if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form or shape. Curtis, Patents (4th ed.) sec. 310."

And see *Winans v. Denmead*, 15 How. 330 (1853).

The straight rod idea was an alternative form which the patentee was entitled to use instead of a rod with a bent form. Baldwin filed his original application in July 1903, and the patent was not granted until May, 1906, and between the time of the application and the time of the grant Baldwin had made lamps in which he had used both a straight rod and the rod with the bent arm. So that it is incorrect to say that the straight rod was suggested to him by the litigation in *Baldwin v. Bleser*.

As a stirrer having a straight end accomplishes in a miner's cap lamp the exact function which one accomplishes with a bent end the reissue did not, in the opinion of this court, broaden the patent, and a patent with a straight end infringes the patent in suit, assuming the patent to be valid. And that the patent now before the court is valid we have no doubt.

In discussing the prior art appellants in their brief refer to the Mosher patent, No. 644,439 and they assert that the broad principle of restricting the control of the flow of the water by a restricting rod in the water tube is clearly shown in that patent. The appellees in their brief refer to the same patent and claim that it is clear that it has no restricting rod, such as that of the patent in suit. They say that the Mosher patent has no water tube embedded in the carbide and has nothing which has the function of, or which
 288 corresponds to, the stirrer of the complainant's device. The experts on each side refer to the patent and undertake to quote from it. We find, however, no such patent in the record and

the experience of this court inclines us to give little weight to the statement of a witness as to what a patent states when we are not furnished with the patent so that we can see for ourselves exactly what it does and does not disclose.

Examination of the record shows that subsequent to the time when allowance of appeal had brought the cause into this court counsel entered into a stipulation that the prior art patents need not be printed in the record, but might be taken to this court as physical exhibits. To this stipulation they obtained the endorsement by a District Judge of the words "so ordered." Attention of the bar is called to the fact that this court is the one to determine whether or not exhibits marked in evidence in the trial court and sent up here shall or shall not be printed in the record upon which argument is to be had and decision to be asked for. The court is composed of three judges, who necessarily have to study the records on appeal, not in banc but individually; they cannot do so properly and expeditiously if there are only single copies of patents, which counsel think of sufficient importance to refer to in their briefs. It is most embarrassing, when one is considering an argument based on such reference to have to suspend such consideration until he can, perhaps on some subsequent day, obtain the patent from one or the other of his associates. Hereafter the Clerk of this court, whenever a stipulation such as this is found in any record filed here, will at once notify counsel that an approval by this court is necessary to its validity.

We may say, however, that we do not find in the Mosher patent, assuming the quotations to be accurately given by the experts, anything which negatives Baldwin's invention.

The appellants strongly rely on the Schmitt British patent No. 15,688, dated July 18, 1898. They assert that in it is to be found the most complete anticipation of the patent in suit and they see in it a complete and accurate embodiment of all that is called for in claim four of the reissue patent. It is true that in the Schmitt patent there is a water reservoir and a water tube. But there is no disclosure of the tube being embedded in the carbide, nor is there a disclosure of a restricting rod or a stirrer such as is disclosed in the patent in suit. It is true there is a rod extending through the water tube and that it is movable vertically within the tube. But it is described as a cleaning rod and that clearly was its sole purpose, notwithstanding the fact that the expert of the appellants argued that it was a restricting rod. The expert on the other side squarely denied that this rod had any such functions and we coincide in that opinion. The water feed in the Schmitt patent is not controlled by the rod but is controlled in part by the valve and in part by the use of a wick in the tube, a device which is referred to in Baldwin's patent as prior art which had proved unsatisfactory.

It is sought to help out the Schmitt patent by an article taken from Dingler's Polytechnisches Journal. But surely if the disclosure of the Schmitt patent is insufficient as we have found it is, it cannot be helped out by the publication referred to. It does not

ever aid appellant's case.' The *seive* tube, which it shows, makes clear that in the lamp which it discloses the end of the water tube is not embedded in the carbid. In describing the filling of the lamp the article states that "care should be taken during the filling operation not to let any carbid fall into the center straining tube." I think this *seive* tube makes it clear that in the lamp of the prior publication the end of the water tube is not embedded in the carbid and not being so embedded it could not have been intended that it should be a stirrer. The language of the Dingler Journal is:

For the regulating the water feed and to avert the clogging up of the water drop-hole, a wire *o* is inserted in the tubular end of the water drop-valve."

Reference to the drawing shows that the clogging was not from the carbid, because the tube and wire all go into the center *seive* tube which is carefully kept free of carbid. There was nothing therefore to be stirred. The words "to regulate the water feed" are too vague to give any definite idea of how this is done; there is nothing to incite that it is accomplished in the manner depicted in the patent in suit. Baldwin clearly sets forth the difficulties which he found in the lamps of the prior art and he describes the manner in which he proposes to attain the end desired. He says:

Various means have been employed to regulate or control the normal rate of flow of water through a water supply tube. For example the bore of the tube has been made of small diameter; but this has not been found practical for various reasons. In the first place, the discharge outlet thereof is under pressure of several inches of water, and it is practically impossible to make the bore so minute that the water will issue in sufficiently small quantity. If the attempt is made to secure this small flow by making the tube very minute, it soon becomes so easily clogged that the operation of the lamp is rendered extremely uncertain. The smallest particle of foreign matter in the water or a bit of slaked carbid carried into the bore by back pressure of the gas will stop the flow completely, and the lamp will go out. Such a tube is difficult, in fact, almost impossible, to clean. Another method which has been employed is to use a duct of comparatively larger bore and fill the same with a wick of more or less fibrous texture for the purpose of checking the supply. This for a time operates with some degree of success, though from the very nature of the material used the precise amount of the feed can never be exactly determined. A valve is generally necessary to regulate the supply. Furthermore, when the lamp has been used for a time the wick, which of course must act as a strainer, becomes filled with solid matter—such as sand, dirt and organic particles contained in the water—so that the feed is reduced. This necessitates frequent adjustment of the valve to restore the proper supply. At times the wick becomes completely choked, and the user, often unskillful in such matters, must tamper with the lamp and insert a new wick, which is at best a troublesome procedure. Again if the lamp has not been used for some time the wick dries out and a very ap-

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preciable time is required to soak it up so that the water will again flow through.

The method which I have invented for securing the proper feed under all circumstances without the above objectionable features is to make the bore of the duct of comparatively large size, extend the tube which forms the duct downward so that it is and will be always embedded in the carbid, and then restrict the duct by means of a wire or rod preferably centrally located therein to leave a channel of the proper size. This arrangement is simple; but in a long experience it has been found to be entirely successful. It is possible to secure the drop-by-drop feed with a duct of considerable size, since the friction of the water on a large area of the tube-wall and wire reduces its flow. This retarding friction may be regulated by varying the size of wire used. The duct does not become choked, since if foreign particles are deposited therein the water can take a zigzag course around it without the supply being appreciably affected. If it is at any time necessary to clean the tube, the wire is simply reciprocated and rotated a few times from the outside of the lamp without disturbing the position of other parts. This nice regulation of the flow enables me to entirely dispense with the troublesome adjustment of the valve. If a valve is used at all, it is employed to shut off the flow entirely and not to regulate it."

The appellants also rely on the Handshy patent No. 591,132. In that patent it is claimed that the rod which extends through
292 the water tube was intended to control the flow of water.

There is nothing however in the specification that indicates that the rod had any such function, and counsel cannot seriously claim that the rod in question restricted to any useful degree the flow of the water. The experts on both sides practically agreed that the rod in the Handshy patent was without effect in restricting and controlling the water flow because it was too small. It is equally evident that the rod could not operate as a stirrer. The water tube could not be embedded in the carbid for the reason that if it were, as the carbid slaked and the sludge formed, the expanding sludge would prevent the reciprocating movement of the tube on which the operation of the lamp depended.

The appellants rely chiefly upon the invalidity of the patent. It is true, however, that they assert that there is no infringement. They say there can be no infringement for the reason that the lamp made by the Justrite Company has no stirrer within the meaning of the original patent. But as we have shown the language of the original patent was comprehensive enough to include the stirrer of the original patent. And defendants do not avoid infringement because their lamp contains a shut off valve, which may be used to open or close the mouth of the water tube. It is not questioned that the flow of water through the water tube can be increased or diminished by turning this valve, but obviously that is not the purpose of the valve. It is clear that this valve was intended to be used simply as a shut off valve and not as a regulating valve. That being so, infringement is plain for the lamp of the defendants is identical with the lamp of the plaintiffs. The lamp of defendants has the carbid container, the

restricting and controlling rod and the stirrer. The rod and tube of the lamp of the plaintiffs as embodied in the lamp of the defendants afford all the regulation of the flow of the water that is necessary.

The conclusions which we have reached are:

That the patent in suit is not invalid because of anything in the prior art.

That claim four of the original patent is valid, and was not broadened in the reissue patent.

293 That claim four of the reissue patent being valid is infringed by the defendants.

That no error was committed by the court below.

The decree is in all respects affirmed with costs.

294 At a Stated Term of the United States Circuit Court of Appeals, in and for the Second Circuit, held at the Court-rooms in the Post-office Building in the City of New York, on the 19th day of November, one thousand nine hundred and fifteen.

Present: Hon. E. Henry Lacombe, Hon. Alfred C. Coxe, Hon. Henry Wade Rogers, Circuit Judges.

FREDERICK E. BALDWIN and Another, Complainants-Appellees,
vs.

ABERCROMBIE & FITCH COMPANY and Another, Defendants-Appellants.

Appeal from the District Court of the United States for the Southern District of New York.

This cause came on to be heard on the transcript of record from the District Court of the United States, for the Southern District of New York, and was argued by counsel.

On consideration whereof, it is now hereby ordered, adjudged and decreed that the decree of said District Court be and it hereby is affirmed with costs.

It is further ordered that a Mandate issue to the said District Court in accordance with this decree.

E. H. L.

295 [Endorsed:] United States Circuit Court of Appeals, Second Circuit. F. E. Baldwin vs. Abercrombie & Fitch Company. Order for Mandate. United States Circuit Court of Appeals for Second Circuit. William Parkin, Clerk. Filed Nov. 19, 1915.

296 UNITED STATES OF AMERICA,
Southern District of New York, ss:

I, William Parkin, Clerk of the United States Circuit Court of Appeals for the Second Circuit, do hereby Certify that the foregoing pages, numbered from 1 to 295 inclusive, contain a true and complete transcript of the record and proceedings had in said Court, in the

case of Frederick E. Baldwin and another against Abercrombie & Fitch Company and another, as the same remain of record and on file in my office.

In Testimony Whereof, I have caused the seal of the said Court to be hereunto affixed, at the City of New York, in the Southern District of New York, in the Second Circuit, this 4th day of December in the year of our Lord One Thousand Nine Hundred and fifteen and of the Independence of the said United States the One Hundred and fortieth.

[Seal United States Circuit Court of Appeals, Second Circuit.]

WM. PARKIN, *Clerk*.

[United States internal revenue documentary stamp, series of 1914, ten cents, cancelled. W. P.]

297 UNITED STATES OF AMERICA, ss:

[Seal of the Supreme Court of the United States.]

The President of the United States of America to the Honorable the Judges of the United States Circuit Court of Appeals for the Second Circuit, Greeting:

Being informed that there is now pending before you a suit in which Abercrombie & Fitch Company and Justrite Manufacturing Company are appellants, and Frederic E. Baldwin and John Simmons Company are appellees, which suit was removed into the said Circuit Court of Appeals by virtue of an appeal from the District Court of the United States for the Southern District of New York, and we, being willing for certain reasons that the said cause and the record and proceedings therein should be certified by the said Circuit Court of Appeals and removed into the Supreme Court of the United States,

298 Do hereby command you that you send without delay to the said Supreme Court, as aforesaid, the record and proceedings in said cause, so that the said Supreme Court may act thereon as of right and according to law ought to be done.

Witness the Honorable Edward D. White, Chief Justice of the United States, the nineteenth day of January, in the year of our Lord one thousand nine hundred and sixteen.

JAMES D. MAHER,

Clerk of the Supreme Court of the United States.

[Endorsed:] File No. 25,050. Supreme Court of the United States, No. 767, October Term, 1915. Abercrombie & Fitch Company et al. vs. Frederic E. Baldwin et al. Writ of Certiorari. United States Circuit Court of Appeals, Second Circuit. Filed Feb. 1, 1916. William Parkin, clerk.

99 United States Circuit Court of Appeals for the Second Circuit.

FREDERIC E. BALDWIN et al., Complainants-Appellees,
vs.

ABERCROMBIE & FITCH COMPANY et al., Defendants-Appellants.

Stipulation.

It is hereby stipulated and agreed by and between counsel for the respective parties that the record already on file with the Clerk of the Supreme Court of the United States shall stand as a return to the writ of certiorari.

Dated this 31st day of January 1916.

JAMES Q. RICE,
Solicitor and of Counsel for Compl't.

JAMES R. OFFIELD,
Solicitor and of Counsel for Def't.

Endorsed: Baldwin vs. Abercrombie & Fitch. Stipulation.
United States Circuit Court of Appeals, Second Circuit. Filed Feb.
1, 1916. William Parkin, Clerk.

00 United States Circuit Court of Appeals, Second Circuit.

To the Honorable the Supreme Court of the United States, Greeting:

The record and all proceedings whereof mention is within made having lately been certified and filed in the office of the clerk of said Supreme Court of the United States, a copy of the stipulation of counsel is hereto annexed and certified as the return to the writ of certiorari issued herein.

Dated New York February 1st, 1916.

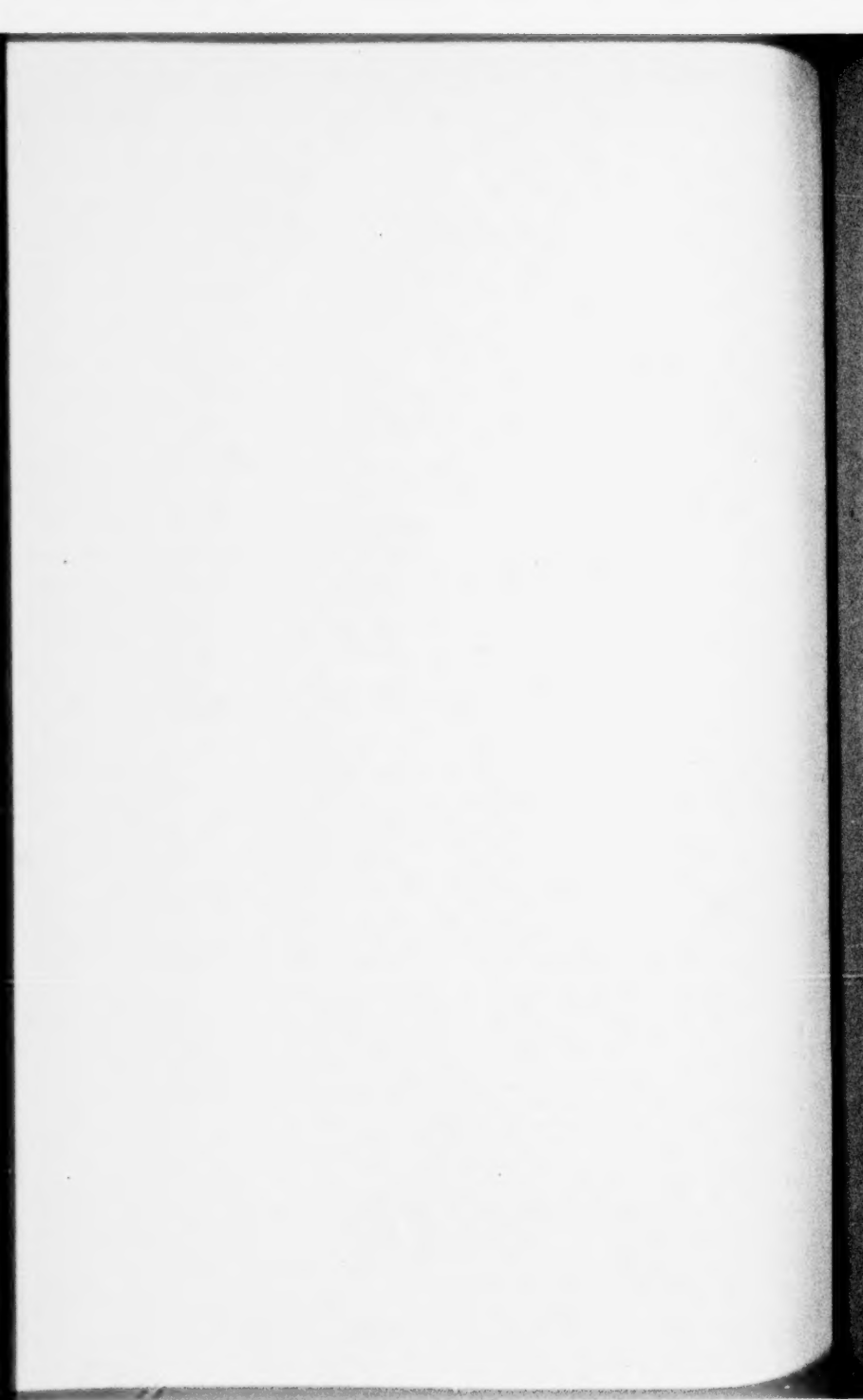
[Seal United States Circuit Court of Appeals, Second Circuit.]

WM. PARKIN,
*Clerk of the United States Circuit Court of
Appeals for the Second Circuit.*

[United States internal revenue documentary stamp, series of
914, 10 cents. Canceled 2/4. W. P.]

01 [Endorsed:] 767/25050. United States Circuit Court of
Appeals, Second Circuit. (Copy.)

02 [Endorsed:] File No. 25,050. Supreme Court U. S.
October term, 1915. Term No. 767. Abercrombie & Fitch
Co. et al., Petitioners, vs. Frederic E. Baldwin et al. Writ of cer-
torari and return. Filed February 12, 1916.



Office Supreme Court, U. S.

FILED

DEC 17 1915

JAMES D. MAHER

CLERK

No. 7 **3** 07

SUPREME COURT OF THE UNITED STATES

In the matter of the application of Abercrombie & Fitch Company and Justite Manufacturing Company of New York for the Writ of Certiorari under Section 6 of the Act of Congress, approved March 3, 1891, creating the Circuit Courts of Appeal.

OCTOBER TERM. A. D. 1915.

ABERCROMBIE & FITCH COMPANY AND
JUSTITE MANUFACTURING COMPANY,

Petitioners,

vs.

FREDERIC E. BALDWIN AND JOHN SIM-
MONS COMPANY,

Respondents.

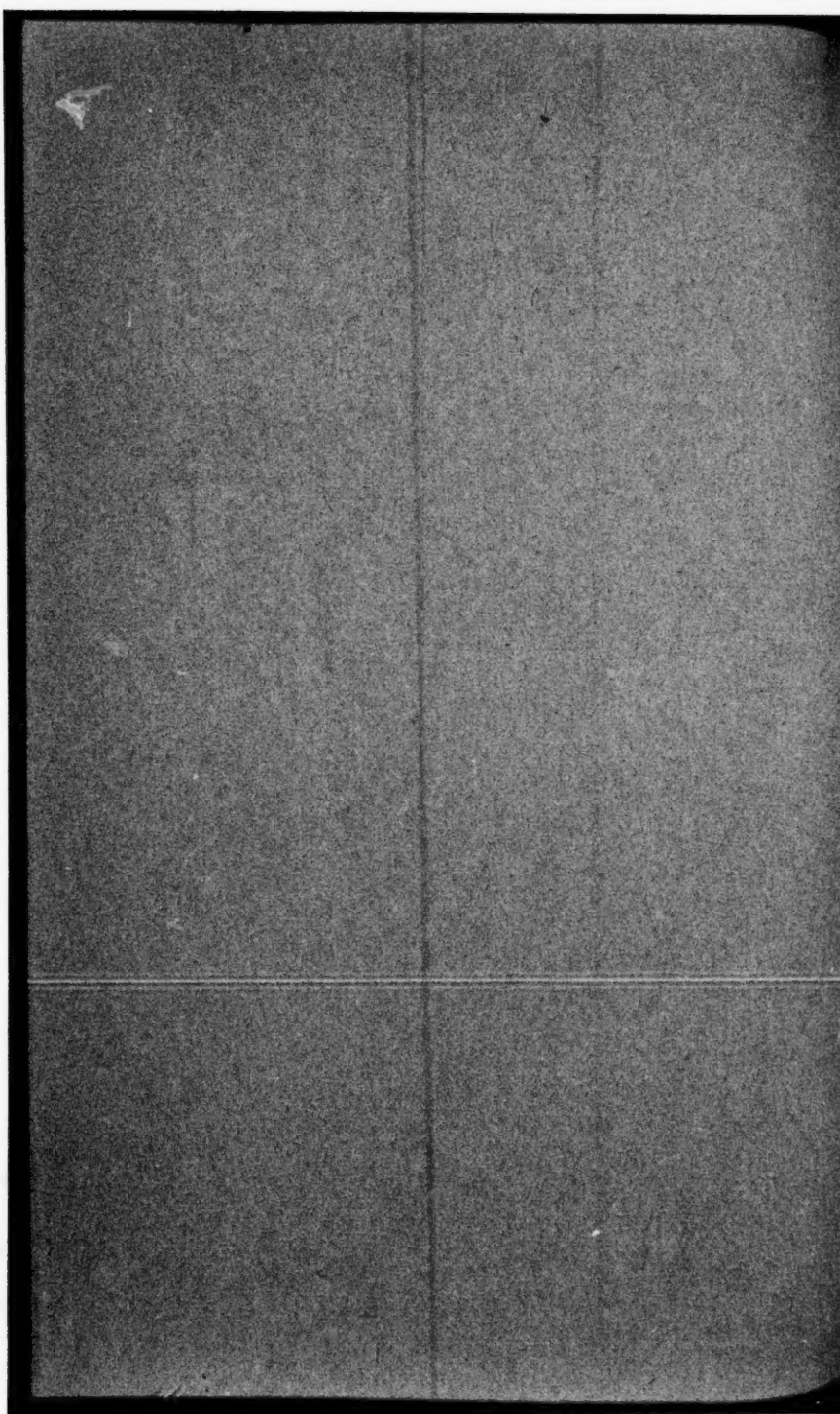
On petition for writ of cer-
tiorari directed to the United
States Circuit Court of Ap-
peals for the Second Circuit.

PETITION FOR WRIT OF CERTIORARI

AND REASONS RELIED ON FOR THE ALLOWANCE OF THE WRIT.

CHARLES E. OFFIELD,
JAMES E. OFFIELD,

Counsel for Petitioners.



IN THE
SUPREME COURT OF THE UNITED STATES

In the matter of the application of Abercrombie & Fitch Company and Justrite Manufacturing Company of New York for the Writ of Certiorari under Section 6 of the Act of Congress, approved March 3, 1891, creating the Circuit Courts of Appeal.

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ABERCROMBIE & FITCH COMPANY AND
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Petitioners,

vs.

FREDERIC E. BALDWIN AND JOHN SIM-
MONS COMPANY,

Respondents.

On petition for writ of certiorari directed to the United States Circuit Court of Appeals for the Second Circuit.

PETITION FOR WRIT OF CERTIORARI
AND REASONS RELIED ON FOR THE ALLOWANCE OF THE WRIT.

*To the Honorable the Chief Justice and Associate
Justices of the Supreme Court of the United States:*

The petition of Abercrombie & Fitch Company and Justrite Manufacturing Company of New York for a writ of certiorari, directed to the United States Circuit

Court of Appeals for the Second Circuit, and ordering that the records and exhibits in a certain cause be certified to this Honorable Court for final review and determination, under the provision of Section 6 of the Act of Congress, of March 3, 1891, etc., said appeal cause being entitled as follows, in the Second Circuit: Frederic E. Baldwin and John Simmons Company, Complainant-Appellees *vs.* Abercrombie & Fitch Company and Justrite Manufacturing Company of New York, Defendant-Appellants.

Statement of Case as to Parties, Subject-Matter—Present and Antecedent Litigations.

Your petitioners, Abercrombie & Fitch Company and Justrite Manufacturing Company of New York, respectfully shows and petitions this Honorable Court as follows:

First. That your petitioners are both corporations doing business under the laws of the State of New York; that your petitioner, Abercrombie & Fitch Company is not the manufacturer of the devices in question, but simply are sellers and dealers in the same, and that your petitioner, the Justrite Manufacturing Company manufactures said devices for the joint petitioner; that the subject-matter of this petition is the validity and scope of certain reissue letters patent in suit granted to one of the respondents, Frederic E. Baldwin, under date of March 11, 1913, being reissue No. 13,542, for Acetylene Gas Generating Lamps and that the co-respondent the John Simmons Company is the exclusive licensee and manufacturer of the lamp of said reissue patent. A copy of the original said letters patent dated May 22, 1906, numbered 821,580, and a copy of the reissue thereof is herewith attached and made part of this petition.

Second. The bill of complaint as originally filed contained another patent to the patentee and respondent, Frederic E. Baldwin, dated August 28, 1900, No. 656,874. On or before the trial of the case respondents counsel dismissed patent No. 656,874 from the case, said patent being dated August 28, 1900, and stated in the record in open court that the respondents relied solely upon claim 4 of the reissue patent No. 13,542 (page 78 of the Rec., line 310).

Upon the trial of the case at the District Court his Honor, Judge Mayer, found the reissue patent valid and infringed as to claim 4 and so ordered in decree form. The Court of Appeals of the Second Circuit affirmed the decree of Judge Mayer.

Antecedent Litigation.

Third. In January, 1909 this patentee and respondent, Frederic E. Baldwin, brought suit in the United States District Court for the Southern District of Illinois against Jacob Bleser for an alleged infringement of the original of the reissue patent in suit No. 821,580, dated May 22, 1906, together with one of his earlier patents. Judge Humphrey in the Bleser case found the earlier patent to Baldwin valid and infringed and the original patent of the reissue patent in this suit No. 821,580 valid and infringed as to claim 1 and 4. The Court of Appeals of the Seventh Circuit reversed the District Court and found that the claims of the earlier patent No. 654,874 of August 28, 1900 were not infringed and that the relied upon claims of the original of the reissue patent in suit were not infringed. Claim 4 of the original patent reads as follows:

“In a lamp of the kind described, the combination with a water reservoir, and a receptacle for calcium carbid, of a water tube extending from the

former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water tube and constituting a stirrer to break up slaked carbid around the outlet of the water-tube as set forth."

The alleged infringing lamp on the Bleser case was the same as the alleged infringing lamp of your petitioners, in this case.

The Court of Appeals for the Seventh Circuit found that a rod extending through a water tube, and constituting a stirrer to break up slaked carbid around the outlet of the water tube, the rod operating to restrict and thus control the flow of water to the carbid, as set forth, was a rod with a stirrer or bent end particularly identified and pointed out in the specification and claims of the original patent and found that the rod with a straight end of the Bleser construction (being exactly the same construction as the rod of your petitioners) was not the rod of the original patent nor the rod contemplated under the terms or spirit of the specifications of the original patent, and certainly not the rod identified by claim 4, and Bleser did not infringe claim 4, 199 F. R., 133.

The decree in this Bleser case was rendered April 23, 1912. In February, 1913, Baldwin filed his application for reissue patent afterwards granted and containing his reconstructed claim 4, the only relied upon claim in this suit, such claim in this suit of the reissue patent reading as follows:

"In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water tube, and constituting a stirrer to break up slaked

carbide around the outlet of the water tube, *the rod operating to restrict and thus control the flow of water to the carbide, as set forth.*"

The italics in the claim are ours. The new element and function introduced into claim 4 on its face is identified by the italicized words. The specifications of the original patent described this purpose and function of the rod in the general description of the mechanism, but a rod for such purpose was nowhere identified or made part of the original claim; but this purpose and function of the rod appearing in the general specification and not identified or made part of the claim was a small matter in comparison with the change in the specifications as to the stirring function of the rod of the original patent and claim 4 thereof.

A reading of the specifications of the reissue patent and comparing the same with the original patent beginning with line 71 to line 89, inclusive, on page 2, shows that the sole and only purpose of the reissue patent was an attempt to misleadingly and erroneously redescribe and change the stirrer element of the original patent, being the bent end of the rod with its wide sweep in a complete circle to stir and break up the slake carbide around the outlet of the water tube, to a rod with a stirrer entirely removed and capable only of a defined vertical movement in a straight line by reason of the stirrer element or construction of the rod being removed, and the rod having a sole movement in the water tube of a piston in a pump. The purpose, effect and result of the reissue patent was to introduce into claim 4 an element not claimed or set forth as to structure, function or purpose in claim 4 of the original patent and to take out of claim 4 of the original patent the bent rod or stirrer of that patent which alone gave the original claim 4 vitality and patentability as a claim.

**This Reissue Patent Declared Invalid as to Claim 4 by
the United States Circuit Court of Appeals for the
Third Circuit.**

Upon the granting of the reissue patent the patentee and correspondent, Frederic E. Baldwin, began suit against Grier Bros. Company upon claim 4 of this reissue patent being the same claim at bar in this case and the construction, except as to outward appearance or dress, practically and identically the same as your petitioners and upon the same record as present in this case. The case in the Third Circuit first came up on motion for preliminary injunction before the late Judge Young, there also being involved in the bill in that case an unfair competition element. Judge Young denied the motion for preliminary injunction relating to the patent in said claim 4 but granted it as to the allegations of unfair competition. (210 F. R., 560.) Upon final hearing upon a completed record substantially the same as present in this case, a decree was entered finding for the respondent, Baldwin, upon both grounds of the bill of complaint, namely, infringement of said claim 4 and unfair competition (215 F. R., 735). An appeal thereupon was taken to the United States Circuit Court of Appeals for the Third Circuit (*Grier Bros Co. v. Frederic E. Baldwin*), and upon January 22, 1915, the Court of Appeals reversed the decree of the District Court as to the present subject-matter and held the reissue patent invalid as to claim 4 for the reason principally that the reissue patent broadened the original and that it was not permissible so to do, after a lapse of time of seven years and after a claim had been limited and defined by final adjudication by the Court of Appeals, copy of opinion hereto attached.

**The Diametrically Opposite Findings and Conclusions
Upon the Same State of Facts Between the Circuit
Court of Appeals of the Second Circuit in this Case and
the Circuit Court of Appeals of the Third and
Seventh Circuits as Shown by the Respective Opinions
and Decrees.**

Fourth. There is no possible doubt, as we have said or intended to say, that there is a difference in result and in decree upon substantially the same record in the litigations above identified. The Third Circuit having declared the Baldwin reissue patent invalid as to claim 4 the only claim at issue for the reasons stated in the opinion, such patent being reissued and enlarged upon seven years after the date of its granting; and the Court of Appeals of the Seventh Circuit declaring that the lamp structure exactly like petitioners did not infringe claim 4 of the original patent and the Court of Appeals of the Second Circuit having declared upon substantially the same record that the fourth claim of the reissue patent was valid and was infringed by your petitioners, copy of opinion hereto attached.

The direct issue between these respective Courts of Appeal and difference in the respective decrees can be well brought out and comprehended simply by reading the opinions of the respective Courts of Appeals. The difference in result and decree between the Courts of Appeals of the Third and Seventh Circuits and the Court of Appeals of the Second Circuit stands out plainly when we understand the invention of Baldwin as stated in connection with his fourth claim of the original patent and we respectfully submit that seemingly this original Baldwin patent has been idealized and further judicially reissued by the opinion and reasoning of the Court of Appeals for the Second Circuit.

There would seem to be no fair ground for contention otherwise, than that the natural and normal reading of the original patent so far as the fourth claim is concerned meant and was intended to mean and identify a rod with a bent end as shown in all of the drawings of the patent and identified by claim 4, that extended through the water tube and constituted the stirrer to break up the slaked carbid around the outlet of the water tube. This rod fitted closely in the water tube, had a right-angle bend at the entrance of the rod to the tube to serve as a handle, and a right-angle bend at its exit of the water tube to serve as a stirrer. These shoulders or bends in the rod prevented absolutely any vertical movement of the rod and prescribed absolutely the only possible movement of the rod, that is, the revolving movement operating the stirrer.

There is no other kind of a rod shown or described or provided for in the original Baldwin patent and no other possible stirrer contemplated except that which follows the revolving operations of the rod and stirrer. The Court of Appeals of the Second Circuit we respectfully submit has idealized and inflated the mechanical structure of the patent and of claim 4 beyond any possibility of recognition by any rule laid down by this court as to reissued patents.

Manifestly if you cut off and removed the stirrer from the Baldwin rod of the original patent you do away with any possibility of a straight remaining portion of the rod in any way constituting a stirrer or having any capacity whatever to stir, and to attribute any function or possibility to the straight rod of petitioners is to idealize and distort that rod out of all semblance to the purpose and rod of the Baldwin patent.

The petitioners straight rod confined at both ends as to a single movement and having a capacity only

of a short, definite, confined, vertical, reciplicating, plunger and piston movement of the blunt end of the rod to force or pump the water into the calcium carbid mass, has nothing of single feature or purpose with the bent rod or stirrer element of the Baldwin patent.

The Court of Appeals for the Seventh Circuit although finding claim 4 of the original Baldwin patent valid says plainly that it contained the minimum amount of patentable novelty and was plainly not infringed by a straight rod. In the meantime it had been ascertained both by Baldwin himself and others that the stirrer or bent rod of his patent was without any practical value or at least was wholly unnecessary and that both Bleser and your petitioners used the straight rod without a stirrer as shown by the Court of Appeals decision of the Seventh Circuit, and it was under these circumstances that Baldwin and his counsel brought out the reissue in suit to cover the construction of Bleser and of your petitioners of the rod from which the stirrer had been removed and the straight rod operating as a piston only was substituted therefor; no amount of sophistry or broadening of language out of its natural meaning, we respectfully submit, can alter this fact.

Fifth. We do not take it that at this time it is expected, or even permissible, to enter into an extended discussion or analysis of the record to show that the decree affirmed by the Court of Appeals for the Second Circuit was plain error in view of the facts proven in this record. If any such study of the record is admissible at this time we respectfully submit that abundant grounds for the granting of this petition and the reversal of the affirmed decree of the Second Circuit will be found (1) in the study of the old art; (2) the fact that your petitioners although engaged in business in a small way prior to the decision of the Court of

Appeals of the Seventh Circuit relied upon that opinion and practically extended and built up their business subsequent thereto; (3) in view of the fact that under an ordinary reading of respondents reissue patent by a lamp manufacturer, petitioners' lamp clearly does not infringe any claim of Baldwin's patent, and as shown, this fact and condition is recognized by the respondents except as to claim 4 of the reissue patent in this suit, and (4) the fact is plainly apparent by a study of the record that petitioners' structure is substantially and indeed exactly the same as the rejected and abandoned claim 6 of the Baldwin original patent, and the lamp structure manufactured by the petitioner herein complained of and enjoined under the decree is the structure made under and in accordance with the rejected and abandoned claim 6 of Baldwin's original patent.

Sixth. The decision of this court in *Miller v. Brass Company* (104 U. S., 350) clearly defines the law of reissue and its application. This court says:

"It is manifest on the face of the patent, when compared with the original, that the suggestion of inadvertence and mistake in the specification was a mere pretense; or if not pretense, the mistake was so obvious as to be instantly discernible on opening the letters patent, and the right to have it corrected was abandoned and lost by unreasonable delay. The only mistake suggested is, that the claim was not as broad as it might have been. This mistake, if it was a mistake, was apparent upon the first inspection of the patent, and if any correction was desired, it should have been applied for immediately. . . . But it must be remembered that the claim of a specific device or combination, and an omission to claim other devices or combinations apparent on the face of the patent, are, in law, a dedication to the public of that which is not claimed. It is a declaration that that which is not claimed is either not the patentee's invention, or, if his, he dedicates it to the public. . . .

If two years public enjoyment of an invention with the consent and allowance of the inventor is evidence of abandonment, and a bar to an application for a patent, a public disclaimer in the patent itself should be construed equally favorable to the public. Nothing but a clear mistake, or inadvertence, and a speedy application for its correction, is admissible when it is sought merely to enlarge the claim. . . .

"The correction of a patent by means of a reissue, where it is invalid or inoperative for want of a full and clear description of the invention, cannot be attended with such injurious results as follow from the enlargement of the claim."

In the case of *James v. Campbell*, 104 U. S., 357, immediately following *Miller v. Brass Company, supra*, this court more specifically stated the rule as follows:

"When a patent clearly and fully, without ambiguity or obscurity, describes and claims a specific invention, complete in itself, so that it cannot be said to be inoperative or invalid, by reason of a defective or insufficient specification, a reissue cannot be had for the purpose of expanding and generalizing the claim so as to make it embrace an invention not described and specified in the original."

In the case of *Parker v. Yale*, 123 S. C., 87, and relating to the question of estoppel and intervening rights this court said:

"In the present case the infringing clock was made by the defendant Lane more than six months before the reissue in suit was applied for. . . . This, therefore, is a case of the amendment of a patent so as to cover the improvement not covered by the patent and which came into use by others than the patentee and his licensee, free from the protection of the patent."

The patentee Baldwin cannot distinguish the combination of elements identified by his reissue claim 4 in suit from his original claim 6 by predicated the minimum amount of patentable novelty, recognized by the Court

of Appeals for the Seventh Circuit—upon the omission of a valve, and then in this case urge that claim 4 is broad enough to cover the construction in which the valve is used as one of the elements of the combination.

In the case of *Leggett v. Avery*, 101 U. S., 257, this court says:

“As before remarked, we consider it extremely doubtful whether reissued letters can be sustained in any case where they contain claims that have been once been formally disclaimed by the patentee, or rejected with his acquiescence and he has consented to such rejection in order to obtain his letters patent. Under such circumstances, the rejection of the claim can in no just sense be regarded as a matter of inadvertence or mistake. Even though it was such, the applicant should be estopped from setting it up on an application for a reissue.”

A Particular Hardship to Your Petitioner, the Justrite Manufacturing Company, If This Petition Is Not Granted.

Seventh. While your petitioner, the Justrite Manufacturing Company is doing business in the State of New York, it is as a manufacturing company an Illinois corporation, having its manufacturing plant at Chicago, Illinois, and appears in this case voluntarily by an intervening petition filed and granted to defend its principal New York customer, the Abercrombie & Fitch Company.

Its manufacture of the lamp in question is a right and just procedure under the Court of Appeals' decision of the Seventh Circuit and for this reason we respectfully submit there exists a peculiar equity upon the part of your petitioner, the Justrite Manufacturing Company, to have this petition granted aside from the

broad public equity and right of this great court to take up this Baldwin reissue patent and deciding its validity for all of the nine Circuits.

Eighth. Your petitioners finally shows unto your Honors that the question involved is of great public importance outside of the particular parties litigant in this case; that if any such construction is given to the Baldwin reissue patent in suit as appears in the Second Circuit, the same will be asserted by respondents to stand as a litigation determining, covering and controlling the construction and operation of any and all acetylene gas miners' lamps hereafter constructed, sold or used for and by the hundreds of thousands of miners employing and to employ an acetylene gas lamp now and until the expiration of such reissue Baldwin patent.

Conclusion.

In conclusion, your Honors, your petitioners respectfully submits that this, your petitioners' petition for the writ of certiorari should be granted, and the record in this case sent up for final review and determination by this court as your petitioners are informed and believes is the rule and practice where there are direct differences of results as to findings and decrees in said courts, as is represented by the leading cases in this court so determined.

Mast Foos Co. v. Stover Mfg. Co., 177 U. S., 485.

Columbus Watch Co. v. Robbins, 148 U. S., 267.

Singer Co. v. Cramer, 192, U. S., 265.

Diamond Rubber Co. of New York v. Consolidated Rubber Tire Co. and Rubber Tire Wheel Co., 444, 220 U. S., 428.

Whereupon your petitioners respectfully prays that this Honorable Court will be pleased to grant a writ of certiorari requiring this said case in the Second Circuit to be certified to this Honorable Court for its review and determination.

JUSTRITE MANUFACTURING COMPANY,
By FREDERICK J. BECKER, Ptes.
ABERCROMBIE & FITCH COMPANY,
By JAMES R. OFFIELD,
Their Attorney.

We hereby certify that we have examined and read the foregoing petition for writ of certiorari and that in our opinion such petition is well founded, and should be granted by this Honorable Court, and that such petition is not filed for delay.

CHARLES K. OFFIELD,
JAMES R. OFFIELD,
Counsel for Petitioners.

November 30th, 1915.

BLESER v. BALDWIN.

(Circuit Court of Appeals, Seventh Circuit. April 23, 1912.)

No. 1,847.

1. PATENTS (§ 328) — VALIDITY AND INFRINGEMENT —
ACETYLENE GAS GENERATING LAMP.

The Baldwin patent, No. 656,874, for an acetylene gas generating lamp, was not anticipated and discloses invention, but in view of the prior art is not entitled to a broad construction with reference to equivalents. Claim 1 *held* infringed by the lamp of the Bleser patent, No. 949,349, and claims 2, 3, 4, 5, 6, and 10 not infringed.

2. PATENTS (§ 328) — VALIDITY AND INFRINGEMENT —
ACETYLENE GAS GENERATING LAMP.

The Baldwin patent, No. 821,580, for an improvement in acetylene gas generating lamps, *held* valid, but not infringed.

Appeal from the Circuit Court of the United States for the Southern District of Illinois.

Suit in equity by Frederick E. Baldwin against Jacob Bleser. Decree for complainant, and defendant appeals. Affirmed in part, and reversed in part.

Appellee was granted two patents for improvements in acetylene gas generating lamps. The prior one was granted August 28, 1900, as number 656,874, and the other was granted May 22, 1906, and numbered 821,580. This suit was instituted to restrain infringement of claims 1, 2, 3, 4, 5, 6, and 10, of the first-named patent, and claims 1 and 4 of the second-named patent, on January 21, 1909. The answer sets up the usual defenses of want of validity and non-infringement. In a general way, both patents cover devices having, (1) a water reservoir located above; (2) a receptacle for containing calcium carbide; (3) a tube leading from the former down into either direct or indirect co-operation with the contents of the latter, and distributing water thereto; (4) a valve controlling the flow of water from the

reservoir to the calcium carbide chamber through said tube; and (5) a rotatable stem extending outside the reservoir so as to form a handle, and extending downward to and carrying the valve, and then passing on down through, and some distance below the connecting tube. In both, the flow of water is regulated by the pressure of the gas generated in the calcium carbide chamber, acting upon the column of water in the tube, and by the valve arrangement.

In the first-named patent the stem serves (1) to rotate the valve into and out of the seat, and (2) to clear the inside of the tube from obstructing accretions. The latter is accomplished by bending the wire which acts as a spring core, and serves to steady the valve in the device of claims 2, 3, 4, 5, 6, and 10, of the first patent, and claims 1 and 4 of the second patent, and by the piston-like action of the stem of claim 1. Claim 10 of the first patent pertains only to the manner of adjusting gas generation to the requirements of the lamp.

In the second patent, the stem protruding below the bottom of the tube is lengthened and bent at an angle so as to stir up the calcium carbide, which has a tendency to clog and cake about the tube opening. Each device provides for a burner. The tube and stem in the first patent in suit have only indirect contact with the carbide body, since these extend into a vertical foraminous tube resting upon and rising from the floor of the carbide chamber. This tube holds the carbide away from the end of the tube and stem. In the latter patent, these ends are not protected from, but extend well into the mass of carbide. The construction and operation of the devices of the patents in suit, so far as here involved, will be readily understood from the drawings here produced.

[Cut.]

It will be noticed that the protruding end of the stem, below the tube *C* in the carbide chamber is pointed. This, the patent asserts, secures the delivery of the water to the carbide in small drops or particles. An excess of water supplied to the carbide results in an excess of gas, which, in turn, stops the flow of water through the tube. The valve is manually adjusted, so that, otherwise than as above stated, there is no automatic adjustment of the water supply. The water pres-

sure is determined by the height of the water column in the tube and tank. When the gas pressure exceeds the water pressure, there may be said to be an excess of gas pressure, and the supply of water will be resisted. It is therefore evident that the required pressure must be adjusted to meet the volume of gas required by any given burner. Some of these, of course, will consume more gas than others. In order to meet these varying conditions, the required pressure must be ascertained.

"In constructing my lamps," says the patent, "after deciding on the special form of burner to be used and determining that pressure of gas, with which it burns best, I make the water tube of such length that the mean height of the water in the reservoir, added to the length of the tube, will afford a pressure approximately equal to that which the lamp requires. The result will be that should the pressure in the gas chamber become too great, the supply of water will be automatically shut off, but as soon as the pressure in the gas chamber becomes normal or less, the water will drop slowly or rapidly as may be required."

Appellant cites three patents in the prior art, viz.: Patent No. 591,132, granted to Handsby, October 5, 1897, for an acetylene gas lamp; patent No. 638,449, granted to Dolan, December 5, 1899, for an acetylene gas generating lamp; and patent No. 644,910 to Hallows and Tucker, on March 6, 1900, for a like lamp.

The first-named patent calls for a water chamber, a storage or pressure chamber, and a carbide chamber. The partition floor between the two latter is a perforated diaphragm, and that between the first two is a flexible diaphragm. The valve which controls the flow of water into the tube which supplies water to the carbide rests upon a valve stem which is fastened to the floor of the carbide chamber. The water tube through which the valve stem extends, depends from the flexible diaphragm or floor of the water receptacle, in which also is located the valve seat, into the carbide body. The valve stem, the patent says, may be secured to the perforated diaphragm which separates the gas chamber from the carbide chamber, or it may be secured to the top cover of the water receptacle. It is intended to be rigid in any case. To close it, the flexible floor of the water tank must be lifted to contact with it by the gas

pressure in the gas tank or chamber. There seems to be no reason why the flow of water through the water tube would not also be stopped by the gas pressure whenever it became excessive, just as in the patent in suit. That it could ever become excessive seems doubtful, since the pressure of the gas would operate to close the valve long before it would affect the water in the tube, because the weight or pressure of the water in the water chamber would be only a fraction of that obtaining at the bottom of the water tube in the carbide chamber. The valve stem is incapable of being rotated to clear the inner walls of the tube or agitate the carbide. The Dolan patent covers a flexible diaphragm, as in Handshy. The valve is carried by a fixed stem attached rigidly to a rod which depends from a nut located in the flexible diaphragm which is placed above the water chamber. The excess gas is conducted to the space between the water chamber and the valve carrying diaphragm. This latter being lifted by gas pressure closes the valve and cuts off the water supply. The carbide chamber is rotated at intervals to free the carbide from the lime and other accumulations. When the pressure of gas is removed, the diaphragm is released and the valve is dropped from its rest.

The patent to Hallows and Tucker has the water and carbide chambers. The water is conducted through tubes or a water jacket paralleling the sides of the two chambers, and next thereto down under the floor of the carbide chamber, and thence to the tube rising from that floor to the top of the carbide body, the entrance to which is controlled by a plug or valve operated by a revoluble stem which terminates at the top of the lamp in a milled nut. When the plug or valve is rotated out of its seat, the water ascends the tube and overflows into the carbide. There is no provision made for the cessation of the generation of gas, though it is not apparent why the gas pressure would not stay the upward flow of the water in the tube. According to the specification, when the pressure of gas is excessive, the gas escapes through the water supply tubes or jacket at the side of the chambers, passing up to the water chamber, and thence out into the atmosphere.

Owing to the arrangement, there seems to be no need of a tube cleaner, though the rotatable tube is shown in

the supply tube in the carbide chamber; its only suggested use being the operation of the water supply plug or valve.

Appellant's device is substantially that of patent No. 949,349, granted to him February 15, 1910, for an acetylene gas generator lamp, and is shown in figure 2 of that patent, so far as essential on this hearing. It has the water and carbide chambers, the water supply tube governed by a valve carried by a stem having a central bore through which passes a needle—both separately operated by external handles. In the patent in suit, the needle is called the valve stem. Here the hollow tube carries the valve, which is rotated into and out of its seat at the bottom of the water chamber when desired. The needle is said to fit the bore in the valve stem, also the opening through the valve body and the feed tube loosely, extending slightly below the latter. It is designed to be slid up and down so as to clean the bore. The bottom of the water supply tube enters the carbide mass, carrying the needle point somewhat in advance of it. The water passes along the needle through the valve stem and is delivered to the carbide from the needle point, as in the patent in suit. In case of excessive generation of gas, the flow of the water is regulated by the back pressure of the gas upon the column of water in the tube, as in appellee's device.

The following drawing fairly discloses appellant's lamp:

[Cut.]

On the hearing before the Circuit Court, the prayer of the bill was granted, defendant was enjoined from further infringing the patents in suit, an accounting was ordered, and judgment for costs decreed against appellant. The cause is now before the court on appeal from that order. The errors assigned are that the court erred in holding that each and all of the claims in suit were valid; that appellant infringed each of them; and in entering a decree in favor of appellee and refusing to enter a decree in favor of appellant. Further facts are stated in the opinion.

A. H. Adams, C. E. Pickard, J. L. Jackson, and A. M. Fitzgerald, for appellant.

M. B. Philipp and James Q. Rice, for appellee.

Before KOHLSAAT and MACK, Circuit Judges, and SANBORN, District Judge.

KOHLSAAT, Circuit Judge (after stating the facts as above). [1] It was not new in acetylene lamps to so adjust the pipe and needle or stem running there-through as that the latter should move automatically up and down within the pipe, and thereby clear it from accumulations. This was attained in the Handshy patent, where the pipe moved up and down the stem, being the reverse of the movement of the stem and pipe in suit.

It was new to claim the regulation of water supply by means of gas pressure upon the column of water in the water supply tube. No reason is perceived, however, why the same result could not have been attained in the Handshy and Hallows and Tucker patents, were these patents not provided with easier means for relief from excessive pressure. It was also new to secure more complete scouring of the inner walls of the water supply tube near its lower end, by bending the needle or stem therewithin, so as to give it stiff resilient bearing against the inner wall of the tube, and at the same time securing steadiness of the valve, in case of jolting or rough handling. None of the patents of the prior art disclose a stem protruding from the bore in the lower end of the water supply pipe. The patent claims for this a better method of distributing or delivering the water to the carbide. It sets out that the water should be delivered in small drops or particles and asserts that this result follows the use of a sharp pointed stem.

Inasmuch as the water supply pipe in the first patent in suit delivers the water into what is called a foraminous tube, through the meshes of which the water passes to the carbide, the advantage of this feature does not seem considerable. This patent has many other elements, but the foregoing are deemed sufficient for the purposes of this suit. Taking into consideration the features above mentioned, the somewhat novel arrangement of the parts, and the presumption arising from the grant, we deem the validity of the patent duly established, qualified, however, by the disclosures of the prior art as above set out. It is evident, however, that it covers no wide field of invention and is not entitled to a broad construction with reference to equivalents. The second patent in suit is for alleged improvements upon the first.

[2] As above stated, these consist in its means for agitating the carbide, and the location of the lower end of the water tube and protruding stem within the carbide mass. The former has some merit of a modest kind. It is new and useful, and, in our judgment, entitled to recognition as involving some inventive thought. The latter is found in Handshy. As to the tube: even were this arrangement thereof not found in the prior art, it falls short of invention. Without it, the other feature is valueless. It is obviously the only thing to do, where it is sought to stir up the packed carbide or carbide refuse by the use of a stem projecting from the end of the tube. Some claim is made that appellant's device discloses a stem, bent near its lower end to operate as appellee's does. This is strenuously controverted by appellant.

An inspection of Exhibit D, being one of appellant's lamps, alleged to disclose a bent stem, satisfies us that the stem is not bent. The Bleser patent does not call

for it, and the proofs do not justify such a finding. Evidently, the tube is imperfect, its wall not being uniform in thickness around its perimeter, thus throwing the needle slightly out of true; but the evidence fails to show that there was any intention to bend it, nor does there appear to have been any advantage in doing so. We do not deem the position of appellee in regard to its being bent well taken. It follows that appellant does not infringe the second patent in suit, and as to that the bill is dismissed for want of equity. Since appellant's needle or stem is so constructed as not to bear frictionally against the inner walls of the water supply tube, it is not the stem of claims 2, 3, 4, 5, and 6 of the first patent in suit.

Claims 2 and 6 set out that the bent stem will prevent rotation of the valve stem. Claim 4 functions the stem to prevent rotation of the valve itself, while claims 2 and 5 ascribe to the stem the function of keeping the inner walls of the water supply tube clean—all operated by a plug which may be manipulated from outside the lamp. The subject-matter of claim 10, which seeks to graduate the height of the water column to the requirements of the burner, was anticipated in the Hallows and Tucker patent, so far as need be here considered. There is no evidence that appellant has appropriated it. Therefore none of these claims are deemed to have been infringed by appellant. Appellant's needle, which in some respects corresponds to appellee's bent stem, differs from it in that it does not carry the valve, is not bent, does not operate as a brake, and may be moved up and down, and, as seems apparent, rotated without interfering with the water supply tube or any other element of his combination.

The Bleser patent calls for a needle fitting loosely into the tube and other hollow parts of which it consti-

tutes the core.' Its function is "to clean the tube 4 and remove any obstruction from the end thereof." It is clearly the stem of claim 1 of the patent in suit, save for the fact that it does not carry the valve member. In other respects its mission is the same as that of the stem of claim 1, which claim calls in part, for "a plug closing and opening into the reservoir, a stem carried by the plug and extending through the reservoir and water tube, and a valve secured to or carried by the stem and controlling the passage from the reservoir into the said tube, as set forth." With regard to appellant's lamp, as a complete device, it appears that it has a plug closing and opening into the reservoir by means of a series of parts through which the needle extends, a valve secured to or carried by those parts arranged to operate as a tube, which valve controls the passage from the reservoir into the water supply tube, and a needle extending through and beyond the tube, like that of claim 1. Those correlated parts, constituting a tube, as above stated, and carrying the valve, together with the needle, are the equivalent of appellee's stem considering them as an equivalent, and taking into account the identity of functions of appellee's stem and appellant's needle from the valve down through and beyond the water supply tube, we have an appropriation of appellee's device by appellant down to that point, wanting only the pointed stem or needle, which appellee claims enhances the efficiency of his device. As in *Handshy*, so in the appellant's device, the lower end of the water supply tube contacts with the carbide mass, therefore the need of the movable needle to agitate the mass, as well as clear the tube. Does the extension of the needle through the water supply tube at the place of contact with the carbide mass alter the case? This feature is shown only in the device of the second patent in suit, but

there the needle or stem protrudes from the tube at considerable length, and substantially at a right angle to the tube. This has been held above not to be infringed by appellant. Nor would the extension of the tube and stem of claim 1 to absolute contact with the carbide mass change the character of the device of that claim. To all intents and purposes it is in contact with that mass. The intervention of the foraminous tube *N*, avoids the need for using the stem to agitate the carbide. If, however, it should become necessary, it is fully adapted to that end. The difference between the two is not deemed important enough to constitute an essential element of the combination of claim 1. This, taken together with the fact that appellant regulates the flow of water by gas pressure, a method not disclosed in the prior art, leads to the conclusion that his device is but an unsuccessful attempt to evade appellee's conception as shown in claim 1 of the first patent in suit. This claim presents the minimum of patentable novelty, but we deem that little entitled to the protection of the statute, and therefore hold it valid and infringed. As to claims 2, 3, 4, 5, 6, and 10, of patent No. 656,874, and claims 1 and 4 of patent No. 821,580, the decree appealed from is reversed and remanded with direction to the Circuit Court to dismiss the bill for want of equity as to said claims. The order appealed from decreeing validity and infringement of said claim 1 of said first-named patent is affirmed.

IN THE
UNITED STATES CIRCUIT COURT OF APPEALS
FOR THE THIRD CIRCUIT.

GRIER BROTHERS COMPANY,	}	October Term, 1914. No. 1891.
<i>vs.</i>		
F. E. BALDWIN <i>et al.</i> (Plaintiff below).		

Appeal from the District Court of the United States
for the Western District of Penna.

IN EQUITY.

Before BUFFINGTON, McPHERSON and WOOLLEY, Circuit
Judges.

McPherson, Judge.

The bill in this suit charges (1) infringement of re-issued letters patent No. 13,542, and (2) unfair competition in the sale of the lamp covered thereby. It came first before the late Judge Young, who refused a preliminary injunction to restrain infringement, but granted it to restrain unfair competition; 210 Fed. 560. Upon final hearing before Judge Orr, a final injunction was granted upon both grounds; 215 Fed. 735.

(1) In order to understand the first branch of the controversy, the scope of the original letters patent must be determined. They are numbered 821,580 and were issued May 22, 1906, to Frederic E. Baldwin for improvements in acetylene gas lamps, "intended for use and adapted to use as bicycle, automobile, yacht, or miner's lamp, or for any other analogous purpose . . ." The body of the lamp is a metallic or other container, and this is divided (horizontally by preference) into two chambers or compartments, the upper intended for water, and the lower, for calcium carbid.

The gas is generated in the lower chamber. The specification deals with two problems, but we are concerned with only one of them, namely—"the means for effecting and controlling the generation of gas." That problem arises out of the following situation: Finely divided carbid is placed in the gas-generating chamber and retained in position by a suitably adjusted spring or other suitable device. A tube leads from the water-chamber into the chamber below, and by this duct the water and the carbid are brought together. The gas is generated by the chemical reaction of these two substances, and the gradual feed of the water must be carefully maintained. The inventor goes on:

"Various means have been employed to regulate or control the normal rate of flow of water through a water-supply tube. For example, the bore of the tube has been made of small diameter; but this plan has not been found practical for various reasons. In the first place, the discharge outlet thereof is under pressure of several inches of water, and it is practically impossible to make the bore so minute that the water will issue in sufficiently small quantity. If the attempt is made to secure this small flow by making the tube very minute, it then becomes so easily clogged that the operation of the lamp is rendered extremely uncertain. The smallest particle of foreign matter in the water, or a bit of slaked carbid carried into the bore by the back pressure of the gas, will stop the flow completely, and the lamp will go out. Such a tube is also difficult, in fact almost impossible, to clean. Another method which has been employed is to use a duct of comparatively large bore, and fill the same with a wick of more or less loose texture for the purpose of checking the supply. This for a time operates with some degree of success, though from the very nature of the material used the precise amount of the feed can never be exactly determined. A valve is generally necessary to regulate the supply. Furthermore, when the lamp has been used for a time the wick, which of course must act

as a strainer, becomes filled with solid matter—such as sand, dirt, and organic particles contained in the water—so that the feed is reduced. This necessitates frequent adjustment of the valve to restore the proper supply. In time the wick becomes completely choked, and the user, often unskilful in such matters, must tamper with the lamp and insert a new wick, which is at best a troublesome procedure. Again, if the lamp has not been used for some time, the wick dries out, and a very appreciable time is required to soak it up so that the water will again flow through.”

These being the difficulties, the patentee turned to his means for overcoming them. His plan was to make the bore of the duct comparatively large, and then to obstruct and restrict it by placing a wire or rod therein, preferably in the center, thus leaving a channel of the proper size and shape. The advantages are thus described:

“This arrangement is simple; but in a long experience it has been found to be entirely successful. It is possible to secure the correct drop-by-drop feed with a duct of considerable size, since the friction of the water on the large area of the tube-wall and wire reduces its flow. This retarding-friction may be regulated by varying the size of wire used. The duct does not become choked, since if foreign particles are deposited therein the water can take a zigzag course around (them) without the supply being appreciably affected. If it is at any time necessary to clean the tube, the wire is simply reciprocated and rotated a few times from the outside of the lamp without disturbing the position of other parts. This nice regulation of the flow enables me to entirely dispense with the troublesome adjustment of the valve. If a valve is used at all, it is employed to shut off the flow entirely and not to regulate it. The construction just described is shown,” &c.

As will be observed, the device thus described is intended to perform a certain part in effecting and con-

trolling the generation of the gas, this part being the regulation of the water-supply, or the control of the flow. But the generation of the gas might also be effected and controlled in another way, and to this subject the inventor immediately passed on:

"In some cases, however, there is employed in connection with the means for introducing the water into the mass of carbid"—that is, in connection with the duct and rod—"a device in the nature of a stirrer, which on proper manipulation may be used to break up the mass of carbid surrounding the outlet of the water duct, and which by having become slaked and caked by the action of water prevents the proper percolation of the latter to the unslaked carbid in the receptacle G, Fig. 2. As such device I employ a stem or rod N, which extends down through the tube L and is *bent at substantially right angles to form an arm N'*. This rod may form a prolongation of the valve-stem M', of Fig. 2 or in case no valve is used may extend from the top of the lamp down through the water-reservoir, as shown in Fig. 3.

"As calcium carbid possesses strongly absorptive properties, the introduction of water through the tube L will result in the gradual slaking of the material about its outlet; but the line thus produced becomes gradually less permeable to the water, so that an insufficient quantity of gas is generated to maintain the proper flame. When this becomes noticeable, the rod N is turned, so as to cause the arm N' to break up to a greater or less extent the mass of lime, and in practice I have found that under ordinary conditions this is amply sufficient to insure a substantially uniform generation of gas until all the carbid in the receptacle G is exhausted.

"In the larger-sized lamps it is desirable to employ two or more water-tubes L and, if desired, stirring rods N, extending down to different points in the carbid-receptacle. This is indicated in Fig. 4, which is an underplan view of the bottom D of the water-reservoir, showing three water-tubes L in section. It is, however, desirable, when a plural-

ity of stirring rods are employed that some means be provided for actuating all of them simultaneously. A device suitable for this purpose is shown in Fig. 6, in which O is a ring placed on top of the lamp, with which bent ends of all the rods N engage, so that a partial rotation of the ring will impart a corresponding movement to each rod."

In the original patent therefore the inventor described two devices by which the generation of gas might be effected and controlled, (1) a tube with a wire or rod therein, and (2) a bent arm on the end of the wire or rod, which could be used as a stirrer, and he claimed both these devices in each of the first four claims:

"1. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a tube extending from the former a considerable distance into the latter so as to be embedded in the mass of carbid contained in said receptacle, and a rod or stem extending through said tube into the carbid-receptacle and having its end formed as a stirrer to break up the slaked carbid around the outlet of the water-tube, as set forth.

"2. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a tube extending from the former into the latter so as to be embedded in the mass of carbid contained in the receptacle, a rod extending from a point outside of the lamp through the tube and into the carbid-chamber and having its end bent to form a stirrer for breaking up the slaked carbid around the outlet of the water-tube, as set forth.

"3. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a plurality of tubes extending from the former into the latter so as to be embedded in the mass of carbid contained in the receptacle, a stirrer passing through each tube adapted to break up the slaked carbid around the end of the tube, and means for actuating all the stirrers simultaneously as set forth.

"4. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water-tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water-tube, and constituting a stirrer to break up slaked carbid around the outlet of the water tube, the rod operating to restrict and thus control the flow of water to the carbid, as set forth."

This then was the patent when it was originally issued in 1906. Three years later the patentee sued Jacob Bleser for infringing claims 1 and 4, as well as several claims of an earlier patent granted in 1900. The Bleser lamp closely resembled the Grier lamp now in question, particularly in the fact that it had no bent arm to act as a stirrer, the end of the rod within the duct being merely pointed. The Court of Appeals of the 7th Circuit in *Bleser v. Baldwin*, 199 Fed. 133, decided that claims 1 and 4 of the patent now under consideration were not infringed by such a construction. The decision was rendered in April, 1912, and we can hardly doubt that the reissue was intended to meet the situation thus created, for it was applied for soon afterward—on Feb. 5, 1913—although this was nearly seven years after the original grant. And the changes that mark the reissue are such as to indicate with much persuasiveness that this was in fact the intention. The patentee amended his specification in two respects: (1) he described the tube as always embedded in the carbid—"extend the tube which forms the duct downward so that its end will be always embedded in the carbid"—a change of not much importance; and (2) he added this significant paragraph:

"It will be understood from what has been said that the function of the stirrer is to break up, pierce, or disturb the particles of the slaked carbid mass

which, when the lamp is in use, forms at the delivery end of the tube. This slaked carbid mass tends to solidify and either shuts the water off altogether, or restricts it so that less water is delivered from the water tube than the lamp demands for efficient operation. As it is sufficient, under certain circumstances, to insure the requisite water flow by so manipulating the stirrer, as to pierce, break up, or loosen the slaked carbid mass immediately around or at the mouth of the tube, it is obvious that the stirrer need not always be formed with a bent end, or so as to extend radially from the mouth of the tube."

Having thus described in his specification a kind of stirrer that would have covered Bleser's construction, he then amended claim 4 so as to read:

"In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water-tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water-tube, and constituting a stirrer to break up slaked carbid around the outlet of the water-tube, *the rod operating to restrict and thus control the flow of water to the carbid, as set forth.*"

The italicized words being the clause inserted.

Now, if we construe the reissue so as to eliminate the need for a bent arm—and this was its principal purpose—it operates to broaden the original patent, and (thus construed) claim 4 cannot be sustained. We have stated the facts fully in order to present the situation clearly, but we do not think it necessary to discuss the controlling legal principles. We think the authorities settle the proposition that a reissue cannot be allowed to broaden the original patent (as Baldwin attempted to do), especially after such a lapse of time as seven years, and after the claim had been limited by a final adjudica-

tion. And this would be true, even if no stress were to be laid upon the rights that had intervened by reason of the Bleser device—although Bleser himself had been manufacturing that device for several years, and the present appellant had been manufacturing it for several months, before the reissue was applied for; *Powder Co. v. Powder Works*, 98 U. S., 126; *Miller v. Brass Co.*, 104 U. S., 350; *Coen v. Wilson*, 132 U. S., 268; *General Electric Co. v. Richmond Co.* (C. C. A.), 178 Fed., 84; *Railway Co. v. Sayles*, 97 U. S., 554; *Flower v. Detroit*, 127 U. S., 563; *Topliff v. Topliff*, 145 U. S., 156.

On the patent question, therefore, we think the decree should have been in favor of the defendant.

(2) Turning now to the subject of unfair competition, we may note in passing that the requisite diversity of citizenship exists in this case, so that the question of jurisdiction that might otherwise arise at this point need not be discussed; *Schiebel Toy Co. v. Clark*, 217 Fed., 761, 774. We agree with the District Court that deliberate unfair competition has been proved, and the only question that calls for consideration is the extent of the relief that has been awarded.

The decree complained of enjoins the appellant from—

“ . . . directly or indirectly placing upon the market, or causing to be placed on the market, the acetylene gas generating lamp identified in this suit as ‘Plaintiff’s Exhibit No. 6,’ and which it complained of in this case as an imitation of Plaintiff’s Exhibit No. 1; or any other acetylene gas generating lamp, which shall not be so differentiated or distinguished in outward form and appearance from plaintiffs’ said lamp, identified as Plaintiff’s Exhibit No. 1, that purchasers thereof will not likely be deceived by similarity of form and appearance or by accessories sold therewith into purchasing such lamps, made or marketed by defendant, thinking the same to be plaintiff’s lamps; and also from doing any act or

thing calculated to induce the belief that acetylene gas generating lamps, not manufactured or offered for sale by plaintiffs, are, in fact, of plaintiffs' manufacture."

It is no doubt true that this decree is giving the appellant trouble, but this was its object, and we are only concerned with the inquiry whether it goes too far. In our opinion it does not, but is carefully guarded so as to protect the right of the Grier lamp to make a fair (but not an unfair) attack upon the market. We agree that actual imitations are not always unfair, but at present, this lamp is undoubtedly a slavish imitation of the Baldwin device, and we are by no means satisfied that the numerous identities are essentially due to structural and economical necessities. It is, of course, true that the Baldwin lamp has no right to monopolize the trade, but the plaintiffs do have the right to insist that the Grier lamp shall cease from being merely a designed and colorable imitation, and shall stand on its own merits. We have no doubt the appellant's ingenuity is capable of solving that problem to the satisfaction of the court below, and we do not feel obliged to point out in what particulars the offending lamp should be modified. As at present constructed, it passes the limit of healthy rivalry in trade, and was properly enjoined. But the following observations may perhaps be usefully made:

The Baldwin lamp is undoubtedly a useful improvement, as its extensive use may indicate, but it has no right to dominate the situation. Its shape and design are protected not by patent, but merely by the rules that govern unfair competition; and it seems clear enough that the necessities of the art require that in size and arrangement all such lamps must bear a general resemblance among themselves. The container must be small, and must be divided internally into a water-

chamber and a chamber for the carbid, and this necessity must influence the shape and arrangement to a considerable degree. Moreover, the lamp must be light in weight, especially when it is to be used in a mine, where it is ordinarily attached to a miner's cap. The patented features are concealed, and cannot be seen by ordinary inspection, so that unlawful interference therewith may be difficult to prevent; but it is not these features with which we are concerned. The superficial details of construction certainly need not be identical in nearly every particular, as they are in Exhibit No. 6; and of course it is also unfair to represent the Grier lamp as a Baldwin, or as an improved Baldwin lamp, or to accompany it with nearly identical instructions printed in the same foreign languages, and with the peculiarly-shaped cleaner referred to by the court below. All these matters were plainly intended to aid in confusing purchasers, and are abuses of the right to compete. It was also objectionable to stamp the appellant's name on a similar part of the lamp in raised characters that bear the same general form and appearance. There was no compelling reason for this, and we can hardly doubt its purpose, namely, to aid in misleading miners unacquainted with English. On the other hand, the cartons enclosing the lamps differ in appearance, and the Grier lamp has a self-sparker attached to the rim of the reflector, this too being a valuable aid in distinguishing the lamps. We have not exhaustively described the details of likeness and difference; our main purpose has been to avoid giving the impression that we regard the Baldwin lamp as having the right to exclude all competitors, while protecting that lamp in the trade that has been acquired by legitimate means. We therefore repeat that the precise matter before us is the correctness of the decree, and for the

reasons thus outlined we think it was right. If the appellant desires a ruling from the court below upon a proposed change in the details and appearance of Exhibit No. 6, we have no doubt that a proper application for such a purpose will be entertained and passed upon in fair and reasonable spirit.

So much of the decree below as refers to the subject of unfair competition is affirmed, but the rest of the decree must be modified in accordance with this opinion, the costs in the District Court and in this court to be equally divided.

UNITED STATES CIRCUIT COURT OF APPEALS,
FOR THE SECOND CIRCUIT.

Frederic E. Baldwin and John Simmons Company, <i>Complainants-Appellees,</i> <i>against</i> Abercrombie & Fitch Company and Justrite Manufacturing Company, <i>Defendants-Appellants.</i>	}
--	---

Before LACOMBE, COXE and ROGERS, Circuit Judges.

James Q. Rice, of counsel for complainants.

James R. Offield, Charles K. Offield, solicitors and of
counsel for defendants.

This cause comes here on appeal from the decree of the United States District Court for the Southern District of New York, entered on February 10, 1915, holding valid and infringed claim four of the reissue patent No. 13,542, issued to Frederic E. Baldwin on March 11, 1913.

The invention covered by this patent is for a lamp designed to generate and burn acetylene or similar gas. It is intended for use as a bicycle, automobile, yacht or miner's lamp, but its commercial utility has been principally in connection with miner's cap lamps. The invention is shown in the following drawing.

The specification describes the lamp as follows:

"Generally considered, the lamp is one comprising a metallic or other receptacle A, preferably provided with a bottom B, which may be readily detached and which when the lamp is in use is held firmly in position by suitable clamps C, so as to make a water and gas tight closure.

"The receptacle is divided, preferably horizon-

tally, by a partition D into two compartments, the upper one E, designed to serve as a water-chamber or reservoir, the lower F, as a gas-generating chamber adapted to contain a receptacle G for calcium carbide, which is generally attached to or forms the detachable bottom.

"In the top of the lamp is an orifice closed by a screw cap H or similar device for the introduction of water to the reservoir, and from the gas-generating chamber F through the water-reservoir E and out through the top of the lamp extends a tube I, which conducts the gas to the burner J."

The complainants relied solely upon claim four, which reads as follows:

"In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbide, of a water tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbide in the receptacle, and a rod extending through the water tube, and constituting a stirrer to break up slaked carbide around the outlet of the water tube, the rod operating to restrict and thus control the flow of water to the carbide, as set forth."

The John Simmons Company intervened in the suit, became a complainant and alleged that it was a corporation organized and existing under the laws of the State of New York; that it had its principal place of business in the Borough of Manhattan in said State; that it was the only manufacturer of the inventions of the plaintiff Baldwin and that unless it was allowed to intervene it would necessitate the beginning of a new action for the recovery of damages and profits; that in 1908 an arrangement was made between it and Baldwin whereby the former manufactured the lamps while both parties sold them; that in 1911 a new contract was made under which it acquired the exclusive right to manufacture and sell the lamps.

The Abercrombie & Fitch Company of the Borough of Manhattan and State of New York, was the original defendant and sold the lamps alleged to infringe.

The Justrite Manufacturing Company of Chicago, Illinois, was the manufacturer of the lamps sold by the Abercrombie & Fitch Company, and intervened under Federal Equity Rule No. 37, which provides that any person may be made defendant who has or claims an interest adverse to the plaintiff.

The amended answer of the Justrite Manufacturing Company denied that the plaintiff Baldwin was the original, sole and first inventor of the alleged improvement claimed by him in his letters patent; averred that the said improvement was null and void for want of utility as well as for want of invention on the part of Baldwin; denied that the same had been in public use or on sale for more than two years prior to the application for the patent; denied the fact of infringement; averred that the principle of the alleged invention was not new but had been fully described in letters patent both of the United States and of foreign countries long prior to the application made by the plaintiff Baldwin for his patent, and averred that the reissue patent No. 13,542 was invalid.

The testimony was taken in open court and a decree entered holding reissue letters patent No. 13,542 to be valid as to claim four; that defendants had infringed; that plaintiff recover the profits which defendants derived from their infringement; that a perpetual injunction issue, and that the injunction granted be suspended pending appeal if appeal be promptly taken. It was also decreed that plaintiffs recover their costs and disbursements.

ROGERS, Circuit Judge (after stating the above facts).

United States patent No. 656,874 was issued to Fred-eric E. Baldwin on August 28, 1900, for an acetylene gas generating lamp; and letters patent No. 821,580 was issued to him on May 22, 1906, for an improvement on the form described in No. 656,874; and reissued letters patent No. 13,542 was issued to him on March 11, 1913, and is the patent in suit.

Patents No. 656,874 and No. 821,580 came before the Circuit Court for the Southern District of Illinois in a suit brought by Baldwin who claimed his patents were infringed by the lamp of the Bleser patent, No. 949,349. The court sustained Baldwin's claims and the case was appealed to the Circuit Court of Appeals for the Seventh Circuit which affirmed in part and reversed in part. The court decided that patent No. 656,874 was valid and claim one infringed by the Bleser patent, but held claims two, three, four, five, six and ten not infringed. Patent No. 821,580 was held valid but not infringed. It declared that in view of the prior art patent No. 656,874 was not entitled to a broad construction with reference to equivalents. *Bleser v. Baldwin*, 199 Fed. 133 (1912).

The above decision was handed down on April 23, 1912, and Baldwin on February 3, 1913, filed his application for the reissue patent No. 13,542. The latter patent then came before the District Court for the Western District of Pennsylvania and was held valid and infringed. The case was then taken on appeal to the Circuit Court of Appeals for the Third Circuit and that court held claim four of the reissue patent void. The court thought claim four of the reissue patent broader than that of the original patent and said that a reissue patent could not be allowed to broaden an original patent after the lapse of so long a time as seven years and after the original patent had been limited by final adjudication.

In the suit now before us this same claim four of the reissue patent is the claim involved. The court below has held it valid and infringed. Its opinion conflicts with the decision in the Third Circuit.

This court appreciates that uniformity is desirable in decisions respecting the validity of patents and is disposed in all doubtful cases to conform to a decision rendered in another Circuit. But in a case in which this court is convinced that the conclusion reached was wrong it is not at liberty to surrender its own judgment upon the issue involved in order that uniformity may be secured. In *Mast, Foos & Company v. Stover Manufacturing Company*, 177 U. S. 485 (1900), Mr. Justice Brown said:

“Comity persuades; but it does not command. It declares not how a case shall be decided, but how it may with propriety be decided. It recognizes the fact that the primary duty of every court is to dispose of cases according to law and the facts; in a word, to decide them right. In doing so, the judge is bound to determine them according to his own convictions. If he be clear in those convictions, he should follow them. It is only in cases where, in his own mind, there may be a doubt as to the soundness of his views that comity comes in play and suggests a uniformity of ruling to avoid confusion, until a higher court has settled the law. It demands of no one that he shall abdicate his individual judgment, but only that deference shall be paid to the judgments of other co-ordinate tribunals. Clearly it applies only to questions which have been actually decided, and which arose under the same facts.”

The plaintiff, Baldwin, first began to market an Acetylene Miner's Cap Lamp in January, 1906. At that time there was no other acetylene cap lamp on the market. Prior to the introduction of the Baldwin lamp miners used oil lamps with a wick, or candles. In an oil lamp the mining law required the use of a high grade of oil, which

cost the miners from 28 to 40 cents a gallon, and a gallon lasted for a week. The Baldwin acetylene lamp resulted in quite a saving to the miners for it could be used for a week at a cost not to exceed 8 cents. The oil lamps too gave off a great deal of smoke which contributed largely to miner's asthma and also consumed a great deal of the oxygen of the air. The Baldwin lamp gave off no smoke and only consumed one-eighth of the oxygen that the oil lamps consumed. Then too the oil lamps had a very large wick, an inch in diameter and rough on the top and in going through windy places with them sparks were often blown off into the timber which was oil soaked and therefore dangerous. And miners were sometimes careless and would throw partly consumed wicks away without putting their foot on them to extinguish them. In preparing powder to blast with the miners often would keep the lamps on their hats, although the law prohibited their doing so and sometimes a spark would fall on the powder and ignite it. It was not an uncommon occurrence for miners to be injured in this way. So that the invention of the plaintiffs' acetylene lamp involved a considerable saving of money to the miners as well as an improvement in their health through better air and gave them protection against explosions and the dangers arising from conflagrations within the mines. It is not surprising therefore to find that over one million of the acetylene lamps of the patent have been sold in the market in the short time that has elapsed since the patent was granted. The Baldwin lamp had merit in it and the inventor accomplished something that was well worth while.

We come now to consider the questions involved.

The Circuit Court of Appeals in the Seventh Circuit held, as before stated, that the original patent was valid

including claim four, and the Third Circuit held that claim four was invalidated by the fact that in the reissue it had been broadened. The patentee had amended his specification in two particulars:

1. He described the tube as always embedded in the carbid.

2. He added the following statement:

“It will be understood from what has been said that the function of the stirrer is to break up, pierce or disturb the particles of the slaked carbid mass which, when the lamp is in use, forms at the delivery end of the tube. This slaked carbid mass tends to solidify and either shuts the water off altogether or restricts it so that less water is delivered from the water tube than the lamp demands for efficient operation. As it is sufficient, under certain circumstances to insure the requisite flow of water by so manipulating the stirrer, as to pierce, break up or loosen the slaked carbid mass immediately around or at the mouth of the tube, it is obvious that the stirrer need not always be formed with a bent end or so as to extend radially from the mouth of the tube.”

He then amended claim four so as to read:

“In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water-tube, and constituting a stirrer to break up slaked carbid around the outlet of the water tube, *the rod operating to restrict and thus control the flow of water to the carbid, as set forth.*”

The italicized words being the clause inserted.

It will be at once conceded that amendment one is not of importance. The objection to amendment two, as the Third Circuit thought, was that it eliminated the need of a bent arm at the end of the rod used as a stirrer. The

Seventh Circuit had held that a rod without a bent arm did not infringe claim four and if that decision was right the Third Circuit was right in regarding the amendment made in the reissue patent as broadening the patent and therefore void. But we are unable to concur in the view taken of the matter in the Seventh Circuit and not concurring in that view we are unable to concur in the view taken in the Third Circuit.

The decision in the Seventh Circuit confined the patentee to a substantially right-angled stirrer while the original claim merely said "constituting a stirrer." The material thing was to stir the sludge and one can stir such a substance as carbid sludge by an up and down motion of a straight rod, though perhaps not as thoroughly as he can by the rotary motion of a bent part. Claim one covers "end formed as a stirrer," which might properly call for something more than a straight end. Claim two covers "end bent to form a stirrer." Claim four has no limitation but speaks merely of the rod as "constituting a stirrer," which, especially in view of the phrasing of the other two claims, may properly be construed as covering a rod of whatever shape (straight or bent) which penetrated into the carbid sufficiently to allow of its being used to stir the same. In that respect it differed from the prior art. It seems to us that the court in the Third Circuit erred in not holding that the "rod extending through the water tube . . . as set forth" was the sort of rod to which the patentee had devoted a whole column of description dealing with prior art, defects and his improvement to avoid them, that is to say a rod of thickness sufficient to regulate flow of water through the tube. It does not follow that because the original patent shows a stirrer having a bent end, it is limited to such a stirrer notwithstanding that the patent

defines the function the stirrer is to discharge, and notwithstanding that in the lamps in suit, a stirrer having a straight end discharges precisely that function.

The Supreme Court laid down the rule in *Machine Company v. Murphy*, 97 U. S., 120, 125 (1877), as follows:

“Except where form is of the essence of the invention, it has but little weight in the decision of such an issue, the correct rule being that, in determining the question of infringement, the court or jury, as the case may be, are not to judge about similarities or differences by the names of things, but are to look at the machines or their several devices or elements, in the light of what they do, or what office or function they perform, and how they perform it, and to find that one thing is substantially the same as another, if it performs substantially the same function in substantially the same way to obtain the same result, always bearing in mind that devices in a patented machine are different in the sense of the patent law when they perform different functions or in a different way, or produce a substantially different result.

“Nor is it safe to give much heed to the fact that the corresponding device in two machines organized to accomplish the same result is different in shape or form the one from the other, as it is necessary in every such investigation to look at the mode of operation or the way the device works, and at the result, as well as at the means by which the result is attained. . . .

“Authorities concur that the substantial equivalent of a thing, in the sense of the patent law, is the same as the thing itself; so that if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form or shape. *Curtis, Patents* (4th ed.) sec. 310.”

And see *Winans v. Denmead*, 15 How., 330 (1853).

The straight rod idea was an alternative form which the patentee was entitled to use instead of a rod with a

bent form. Baldwin filed his original application in July, 1903, and the patent was not granted until May, 1906, and between the time of the application and the time of the grant Baldwin had made lamps in which he had used both a straight rod and the rod with the bent arm. So that it is incorrect to say that the straight rod was suggested to him by the litigation in *Baldwin v. Bleser*.

As a stirrer having a straight end accomplishes in a miner's cap lamp the exact function which one accomplishes with a bent end the reissue did not, in the opinion of this court, broaden the patent, and a patent with a straight end infringes the patent in suit, assuming the patent to be valid. And that the patent now before the court is valid we have no doubt.

In discussing the prior art appellants in their brief refer to the Mosher patent, No. 644,439 and they assert that the broad principle of restricting the control of the flow of the water by a restricting rod in the water tube is clearly shown in that patent. The appellees in their brief refer to the same patent and claim that it is clear that it has no restricting rod, such as that of the patent in suit. They say that the Mosher patent has no water tube embedded in the carbid and has nothing which has the function of, or which corresponds to, the stirrer of the complainant's device. The experts on each side refer to the patent and undertake to quote from it. We find, however, no such patent in the record and the experience of this court inclines us to give little weight to the statement of a witness as to what a patent states when we are not furnished with the patent so that we can see for ourselves exactly what it does and does not disclose.

Examination of the record shows that subsequent to the time when allowance of appeal had brought the cause

into this court counsel entered into a stipulation that the prior art patents need not be printed in the record, but might be taken to this court as physical exhibits. To this stipulation they obtained the endorsement of a District Judge in the words "so ordered." Attention of the bar is called to the fact that this court is the one to determine whether or not exhibits marked in evidence in the trial court and sent up here shall or shall not be printed in the record upon which argument is to be had and decision to be asked for. The court is composed of three judges, who necessarily have to study the records on appeal, not *in banc* but individually; they cannot do so properly and expeditiously if there are only single copies of patents, which counsel think of sufficient importance to refer to in their briefs. It is most embarrassing, when one is considering an argument based on such reference to have to suspend such consideration until he can, perhaps on some subsequent day, obtain the patent from one or the other of his associates. Hereafter the Clerk of this court, whenever a stipulation such as this is found in any record filed here, will at once notify counsel that an approval by this court is necessary to its validity.

We may say, however, that we do not find in the Mosher patent, assuming the quotations to be accurately given by the experts, anything which negatives Baldwin's invention.

The appellants strongly rely on the Schmitt British patent No. 15,688, dated July 18, 1898. They assert that in it is to be found the most complete anticipation of the patent in suit and they see in it a complete and accurate embodiment of all that is called for in claim four of the reissue patent. It is true that in the Schmitt patent there is a water reservoir and a water tube. But there is no disclosure of the

tube being embedded in the carbid, nor is there a disclosure of a restricting rod or a stirrer such as is disclosed in the patent in suit. It is true there is a rod extending through the water tube and that it is movable vertically within the tube. But it is described as a cleaning rod and that clearly was its sole purpose, notwithstanding the fact that the expert of the appellants argued that it was a restricting rod. The expert on the other side squarely denied that this rod had any such functions and we coincide in that opinion. The water feed in the Schmitt patent is not controlled by the rod but is controlled in part by the valve and in part by the use of a wick in the tube, a device which is referred to in Baldwin's patent as prior art which had proved unsatisfactory.

It is sought to help out the Schmitt patent by an article taken from Dingler's *Polytechnisches Journal*. But surely if the disclosure of the Schmitt patent is insufficient as we have found it is, it cannot be helped out by the publication referred to. It does not however aid appellants case. The sieve tube, which it shows, makes it clear that in the lamp which it discloses the end of the water tube is not embedded in the carbid. In describing the filling of the lamp the article states that "care should be taken during the filling operation not to let any carbid fall into the center straining tube." We think this sieve tube makes it clear that in the lamp of the Dingler publication the end of the water tube is not embedded in the carbid and not being so embedded it could not have been intended that it should be a stirrer. The language of the Dingler Journal is:

"For the regulating the water feed and to avert the clogging up of the water drop-hole, a wire *e* is inserted in the tubular end of the water drop-valve."

Reference to the drawing shows that the clogging was not from carbid, because the tube and wire all go into the center sieve tube which is carefully kept free of carbid. There was nothing therefore to be stirred. The words "to regulate the water feed" are too vague to give any definite idea of how this is done; there is nothing to indicate that it is accomplished in the manner adopted in the patent in suit. Baldwin clearly sets forth the difficulties which he found in the lamps of the prior art and he describes the manner in which he proposes to attain the end desired. He says:

"Various means have been employed to regulate or control the normal rate of flow of water through a water supply tube. For example the bore of the tube has been made of small diameter; but this plan has not been found practical for various reasons. In the first place, the discharge outlet thereof is under pressure of several inches of water, and it is practically impossible to make the bore so minute that the water will issue in sufficiently small quantity. If the attempt is made to secure this small flow by making the tube very minute, it then becomes so easily clogged that the operation of the lamp is rendered extremely uncertain. The smallest particle of foreign matter in the water or a bit of slaked carbid carried into the bore by back pressure of the gas will stop the flow completely, and the lamp will go out. Such a tube is difficult, in fact, almost impossible, to clean. Another method which has been employed is to use a duct of comparatively large bore and fill the same with a wick of more or less loose texture for the purpose of checking the supply. This for a time operates with some degree of success, though from the very nature of the material used the precise amount of the feed can never be exactly determined. A valve is generally necessary to regulate the supply. Furthermore, when the lamp has been used for a time the wick, which of course must act as a strainer, becomes filled with solid matter—such as sand, dirt and organic particles contained in

the water—so that the feed is reduced. This necessitates frequent adjustment of the valve to restore the proper supply. In time the wick becomes completely choked, and the user, often unskilful in such matters, must tamper with the lamp and insert a new wick, which is at best a troublesome procedure. Again if the lamp has not been used for some time the wick dries out and a very appreciable time is required to soak it up so that the water will again flow through.

“The method which I have invented for securing the proper feed under all circumstances without the above objectionable features is to make the bore of the duct of comparatively large size, extend the tube which forms the duct downward so that its end will be always embedded in the carbid, and then restrict the duct by means of a wire or rod preferably centrally located therein to leave a channel of the proper size. This arrangement is simple; but in a long experience it has been found to be entirely successful. It is possible to secure the drop-by-drop feed with a duct of considerable size, since the friction of the water on a large area of the tube-wall and wire reduces its flow. This retarding friction may be regulated by varying the size of wire used. The duct does not become choked, since if foreign particles are deposited therein the water can take a zigzag course around it without the supply being appreciably affected. If it is at any time necessary to clean the tube, the wire is simply reciprocated and rotated a few times from the outside of the lamp without disturbing the position of other parts. This nice regulation of the flow enables me to entirely dispense with the troublesome adjustment of the valve. If a valve is used at all, it is employed to shut off the flow entirely and not to regulate it.”

The appellants also rely on the Handshy patent No. 591,132. In that patent it is claimed that the rod which extends through the water tube was intended to control the flow of water. There is nothing however in the specification that indicates that the rod had any such func-

tion, and counsel cannot seriously claim that the rod in question restricted to any useful degree the flow of the water. The experts on both sides practically agreed that the rod in the Handshy patent was without effect in restricting and controlling the water flow because it was too small. It is equally evident that the rod could not operate as a stirrer. The water tube could not be embedded in the carbid for the reason that if it were, as the carbid slaked and sludge formed, the expanding sludge would prevent the reciprocating movement of the tube on which the operation of the lamp depended.

The appellants rely chiefly upon the invalidity of the patent. It is true, however, that they assert that there is no infringement. They say there can be no infringement for the reason that the lamp made by the Justrite Company has no stirrer within the meaning of the original patent. But as we have shown the language of the original patent was comprehensive enough to include the stirrer of the original patent. And defendants do not avoid infringement because their lamp contains a shut off valve, which may be used to open or close the mouth of the water tube. It is not questioned that the flow of water through the water tube can be increased or diminished by turning this valve, but obviously that is not the purpose of the valve. It is clear that this valve was intended to be used simply as a shut off valve and not as a regulating valve. That being so infringement is plain for the lamp of the defendants is identical with the lamp of the plaintiffs. The lamp of defendants has the carbid container, the restricting and controlling rod and the stirrer. The rod and tube of the lamp of the plaintiffs as embodied in the lamp of the defendants afford all the regulation of the flow of the water that is necessary.

The conclusions which we have reached are:

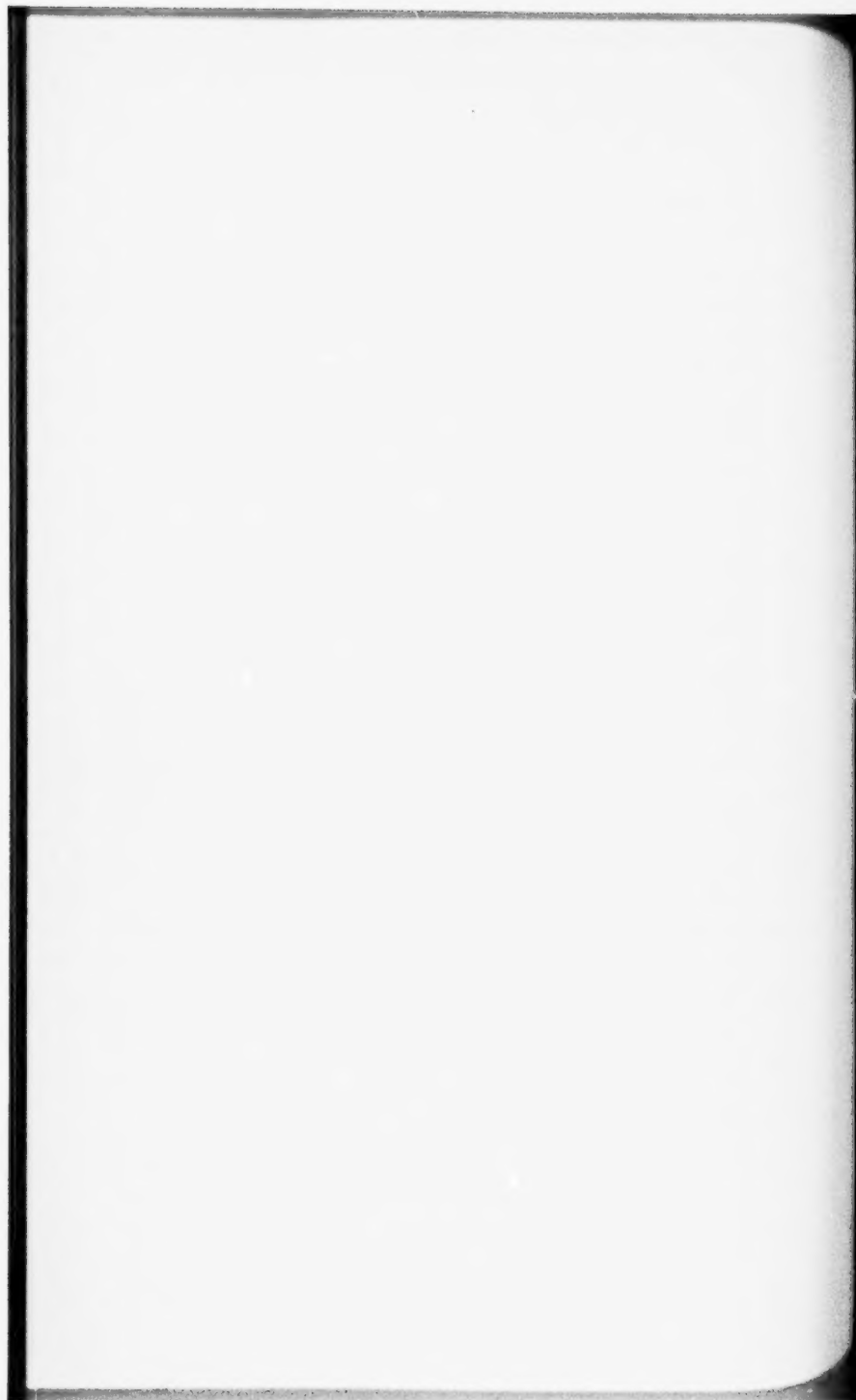
That the patent in suit is not invalid because of anything in the prior art.

That claim four of the original is valid, and was not broadened in the reissue patent.

That claim four of the reissue patent being valid is infringed by the defendants.

That no error was committed by the court below.

The decree is in all respects affirmed with costs.



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Illian Supreme Court, U. S.
FILED
MAR 12 1917
JAMES D. MAHER
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SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, A. D. 1916

No. [REDACTED] 67

ABERCROMBIE & FITCH COMPANY AND JUSTITIE MANUFACTURING
COMPANY,

Appellants,

vs.

FREDERIC E. BALDWIN AND JOHN SIMMONS COMPANY,

Appellees.

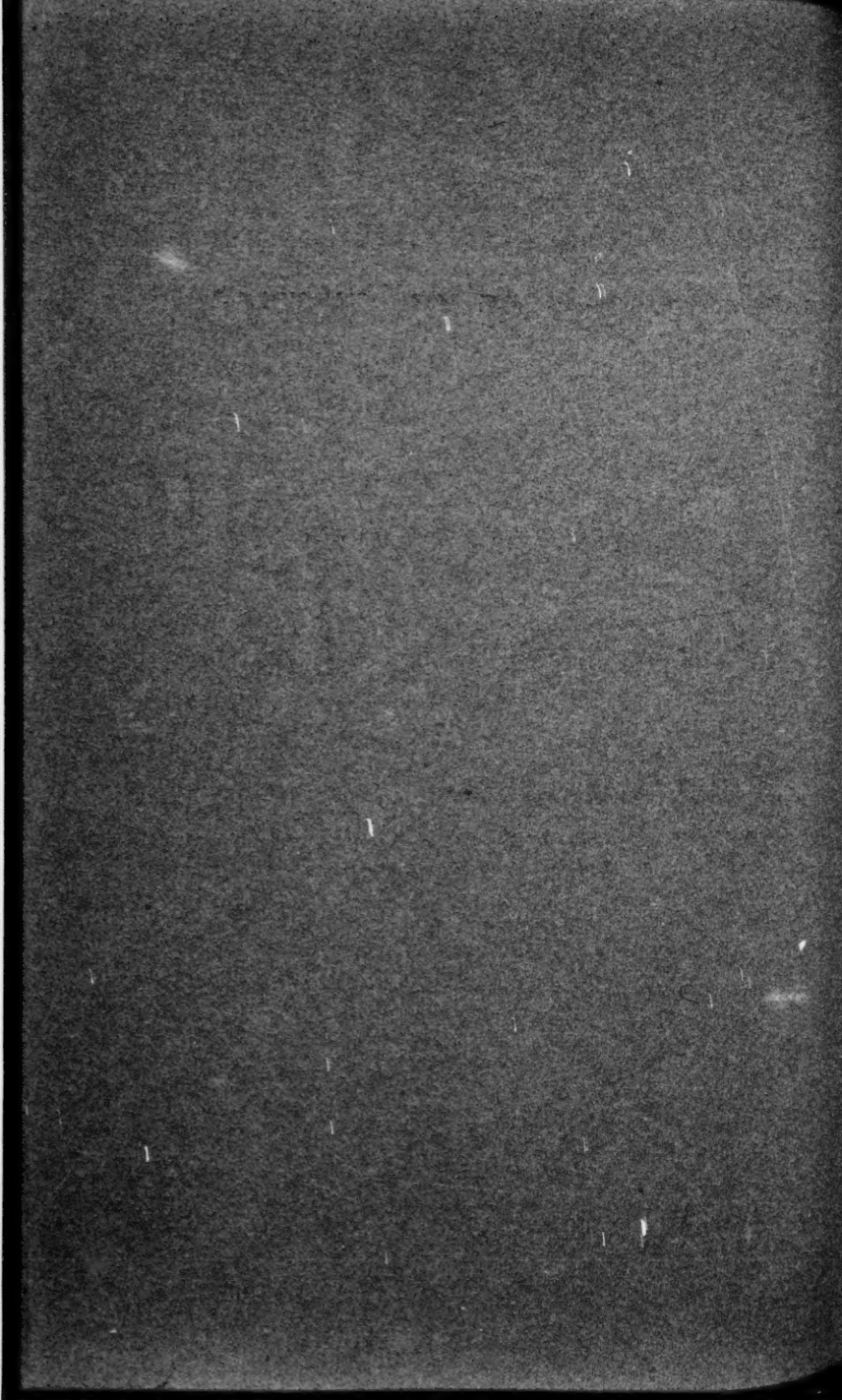
BRIEF AND ARGUMENT FOR APPELLANTS

BY

JAMES R. OFFIELD.

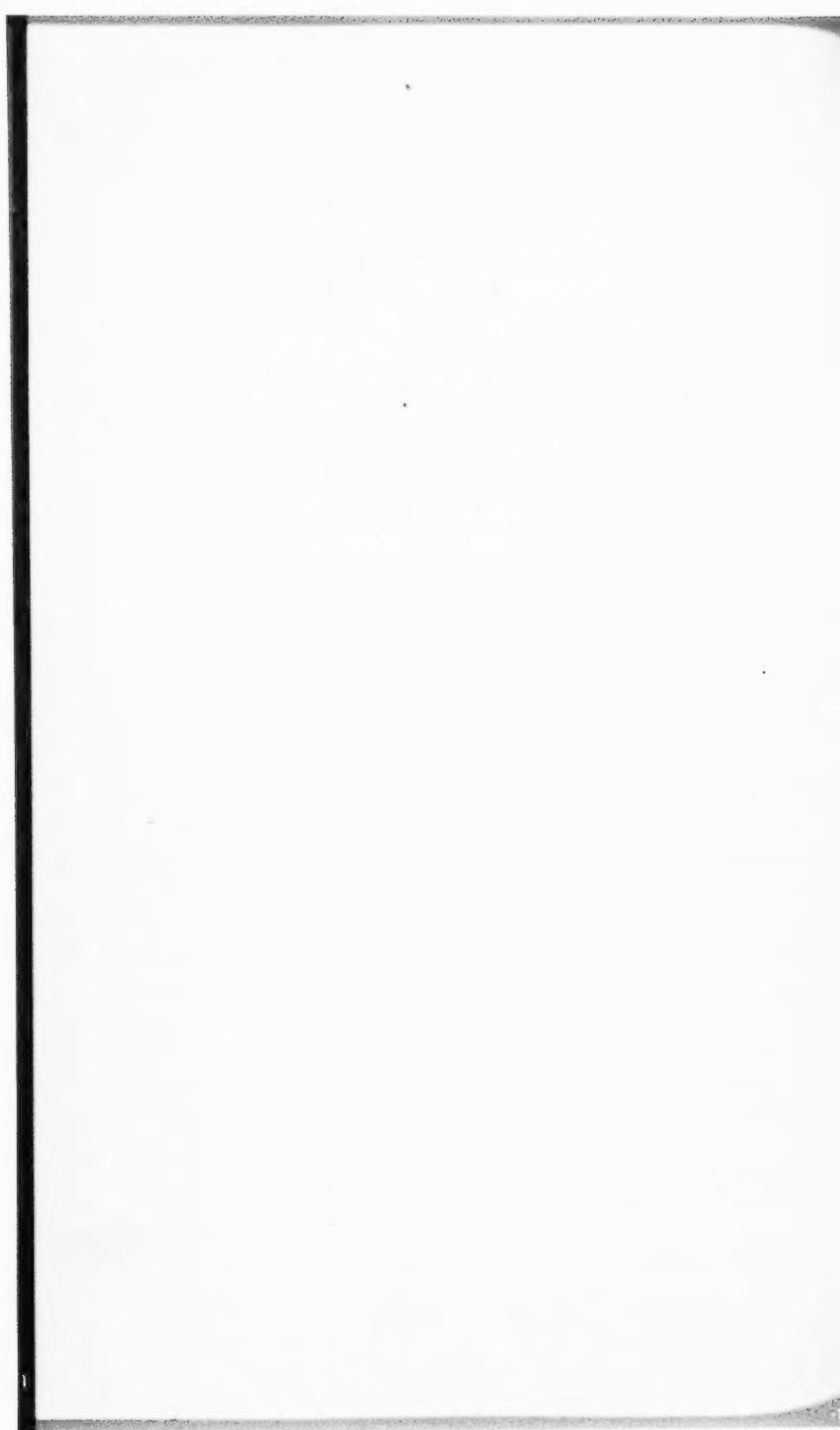
CHARLES K. OFFIELD,
Of Counsel.

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IN THE
SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, A. D. 1916.

No. 323.

**ABERCROMBIE & FITCH COMPANY AND JUSTRITE MANUFACTURING
COMPANY,**

Appellants,

vs.

FREDERIC E. BALDWIN AND JOHN SIMMONS COMPANY,

Appellees.

BRIEF AND ARGUMENT FOR APPELLANTS

BY

JAMES R. OFFIELD.

Statement of the Case.

This is a suit to enjoin the appellants from the manufacture and sale of acetylene gas generating lamps under reissue letters patent of the United States No. 13,542, dated March 11, 1913.

Claim 4 is the only claim sued upon and is as follows:

“4. In a lamp of the kind described, the combination with a water reservoir, and a receptacle for calcium carbide, of a water tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbide in the receptacle, and a rod extending through

the water tube and constituting a stirrer to break up slaked carbide around the outlet of the water tube, the rod operating to restrict and thus control the flow of water to the carbide, as set forth."

A copy of the reissue letters patent is to be found beginning upon page 112 of the Record.

A copy of the file history of the original patent No. 821,580, dated May 22, 1906, is to be found beginning upon page 130 of the Record.

Assignment of Errors.

The District Court erred in the following particulars:

1st. In holding that the plaintiff Frederic E. Baldwin was the first, original and sole inventor of the invention described in and particularly recited in claim 4 of United States reissue letters patent No. 13,542, issued March 11, 1913, for acetylene gas generating lamps.

2nd. In holding that reissue letters patent No. 13,542 are, as to claim 4 thereof, good and valid in law and that the plaintiffs, Frederic E. Baldwin and John Simmons Company, are the lawful owners of said invention and reissue letters patent.

3rd. In holding that defendants, Abercrombie & Fitch Company and Justrite Manufacturing Company, have infringed upon claim 4 of said reissue letters patent No. 13,542, and upon the exclusive right of the plaintiff under the same.

4th. In holding that reissue claim 4 can be extended to embrace subject-matter disclaimed and abandoned in original claim 6.

5th. In holding defendants' construction to infringe.

6th. In not holding that the Justrite Company be re-

lieved because of intervening rights which it had acquired.

7th. In holding that the original letters patent were insufficient and claim 4 thereof to be broader than originally supposed and the error thus made arose by reason of that inadvertence against which the statute was designed to protect.

8th. In holding complainants entitled to recover of the defendants, Abercrombie & Fitch Company and the Justrite Manufacturing Company, the profits which they or either of them have derived by reason of the alleged infringement of said claim 4 of the reissue letters patent, and also any and all damages that complainants have sustained by reason of such infringement.

9th. In referring the case to a Master in Chancery.

10th. In enjoining the defendants, their officers, clerks, agents, servants and all claiming or holding under or through them from the manufacture, sale and use, in any manner, of the lamps described in said reissue letters patent No. 13,542, and particularly referred to in claim 4 thereof.

11th. In holding that the injunction hereinbefore granted is to be suspended and not to be issued pending an appeal and that if such appeal be not taken within twenty days from the entry of this decree the plaintiff may apply, on five days' notice, for a modification of the suspension of the injunction hereinbefore provided for.

Antecedent Litigation.

In January, 1909, the patentee and appellee, Frederic E. Baldwin, brought suit in the United States District Court, Southern District of Illinois, against Jacob Bleser for an alleged infringement of the **original** of the

reissue patent in suit, No. 821,580, of May 22, 1906, together with one of his earlier patents. Judge Humphrey in the Bleser case found the earlier patent to Baldwin valid and infringed and the original patent of the reissue patent in this suit, No. 821,580, valid and infringed as to claims 1 and 4. The Court of Appeals of the Seventh Circuit reversed the District Court and found that the claims of the earlier patent No. 654,874, of August 28, 1900, were not infringed and that the relied upon claims of the original of the reissue patent in suit were not infringed. Claim 4 of the original patent is as follows:

“4. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water-tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water-tube and constituting a stirrer to break up slaked carbid around the outlet of the water-tube, as set forth.”

The alleged infringing lamp in the Bleser case was the same as the alleged infringing lamp of the Justrite Manufacturing Company, appellant in this case.

The Court of Appeals for the Seventh Circuit in substance found that a rod as specified in original claim 4 that extended through a water tube and constituting a stirrer to break up slaked carbide around the outlet of the water tube and adapted to be embedded in the mass of carbid, was a rod that was provided with a stirrer or bent end as particularly identified and pointed out in the specification and claims of the original patent and **that a rod with a straight end of the Bleser construction** (being exactly the same construction as the rod of appellants) **was not the rod of the original patent nor the rod contemplated under the terms or spirit of the specifications of the original patent and certainly not the rod iden-**

tified by claim 4, and consequently held that Bleser did not infringe claim 4. (*Baldwin v. Bleser*, 199 F. R., 133.)

The decree in the Bleser case was rendered April 23, 1912. In February, 1913, Baldwin filed his application for the reissue patent in suit, which contains his reconstructed and modified claim 4, the only relied upon claim in this suit, and identical with claim 4 of the original patent (Record, p. 154), with the following additional subject-matter tacked on, to-wit:

"the rod operating to restrict and thus control the flow of water to the carbide, as set forth."

The specification of the reissue patent was materially changed and will be hereinafter fully discussed.

Third Circuit Case.

Upon the granting of the reissue patent, Frederic E. Baldwin began suit against Grier Brothers Company upon claim 4 of the reissue patent, being the claim at bar, and the mechanical construction of the Grier lamp being practically, if not identically, the same as the lamp of the appellants. The case in the Third Circuit came up on a motion for preliminary injunction before the late Judge Young, there also being involved in the bill in the Grier case an unfair competition issue. Judge Young denied the motion for preliminary injunction relating to claim 4 of the patent, but granted it as to the allegations of unfair competition. (210 F. R., 560.) Upon final hearing and a completed record substantially the same as in this case, a decree was entered finding for the appellee Baldwin upon both grounds of the bill of complaint, namely, unfair competition and infringement of claim 4 (215 F. R., 735). An appeal thereupon was taken to the United States Circuit Court

of Appeals for the Third Circuit (*Grier Brothers Co. v. Frederic E. Baldwin*, 219 F. R., 735), and upon January 22, 1915, the Court of Appeals for the Third Circuit reversed the decree of the District Court as to the present subject-matter, and held the reissue patent **invalid as to claim 4 for the reason principally that the reissue patent broadened the original and that it was not permissible so to do after a lapse of time of seven years and after a claim had been limited and defined by final adjudication by the Court of Appeals for the Seventh Circuit.**

Present Litigation.

Before the decision of the Court of Appeals in the Bleser case and **a year and seven months** before Baldwin filed his application for the reissue patent, the Justrite Manufacturing Company, appellant, made its first sale of a lamp of the type herein complained of (Record, p. 65, Q. 3 and A.).

While the Grier suit was still pending in the District Court the appellees herein filed their bill of complaint against Abercrombie & Fitch Company, a New York corporation, having its place of business in the City of New York, and dealers in the acetylene lamps manufactured by the Justrite Manufacturing Company. The Justrite Manufacturing Company intervened as a party defendant and assumed the defense of the suit brought against its customer.

Upon February 6, 1915, and shortly after the decision by the Court of Appeals in the Third Circuit, Judge Mayer of the District Court of the Second Circuit rendered his decision in which he found claim 4 of the reissue letters patent to be valid and infringed (Judge Mayer's opinion, Record, p. 97).

The case was duly appealed, and upon November 19, 1915, the Court of Appeals for the Second Circuit rendered its opinion to the effect that claim 4 of the re-issue patent was valid and infringed.

There is therefore a direct conflict of opinion between the Courts of Appeals for the Second and Third Circuits on substantially the same set of facts.

The Substance of the File History of Original Baldwin Patent No. 821,580.

In order that the scope and importance of the modifications made in the specification and claim 4 of the reissue patent may be fully appreciated it is first necessary to thoroughly understand the nature of the invention and the proceedings in the Patent Office leading up to the grant of the original patent. When the application for the original patent was presented to the Patent Office the usual drawing accompanied the application, as appears immediately following page 150 of the Record.

The structure disclosed in this drawing comprises a water reservoir E, a carbide receptacle G, a partition D separating the water compartment from the carbide receptacle, a tube L leading from the water reservoir into the receptacle G and forming a duct for introducing water into the carbide, a rod N extending through the water reservoir and through the water tube and having its lower end N' bent to form a stirrer, and a burner J connected to a tube I that is in communication with the carbide chamber whereby the gas is conducted to the burner. In Figs. 1, 2 and 3 a single water tube and stirrer are shown, which were intended to be used in the smaller types of carbide lamps such as stated in the specification as for bicycle or miners'

lamps, whereas in Figs. 4 and 5 the multiple type of stirrer construction is shown that is intended for the larger size lamps, such as automobile or yacht purposes. But in both forms of construction the rod extending through the water tube is shown provided with an end bent at substantially right angles to the long axis of the rod for the purpose of acting as a stirrer, and the function of this stirrer is described in the specification of the patent upon page 2, lines 66 to 80, inclusive:

“As calcium carbide possesses strongly absorptive properties the introduction of water through the tube L will result in the gradual slaking of the material about its outlet; but the lime thus produced becomes gradually less permeable to the water, so that an insufficient quantity of gas is generated to maintain the proper flame. When this becomes noticeable, the rod N is turned, so as to cause the arm N' to break up to a greater or less extent the mass of lime and in practice I have found that under ordinary conditions this is amply sufficient to insure a substantially uniform generation of gas until all of the carbide in the receptacle G is exhausted.”

Of the eight original claims of the application, the broad claims 1, 2 and 6 (found upon pages 134 and 135 of the Record) were rejected by the Examiner upon Baldwin patent No. 656,874, of August 28, 1900; Peck No. 622,015, of March 28, 1899; Van Pragg No. 705,166, of July 22, 1902, and British patent to Schmitt, No. 15,688 of July 18, 1898. These prior patents disclose the following elements:

- (a) A water reservoir.
- (b) A receptacle for calcium carbide.
- (c) A water duct or tube extending from the water reservoir to the carbide receptacle and into the latter.
- (d) A wire in the duct or tube.

Original claims 3, 4 and 5 were the only ones allowed and claim 5 is not of interest because it involves a con-

struction having a plurality of tubes. Original claim 3 describes the rod or stem as follows:

"A rod or stem extending through said tube into the carbide receptacle and having its end formed as a stirrer to break up the slaked carbide."

Original claim 4 contains the limitation:

"A rod extending from a point outside of the lamp through the tube and into the carbide chamber and having its end bent to form a stirrer for breaking up the slaked carbide."

Claim 6 described the rod as:

"A rod extending from a point outside the lamp through the tube into the carbide receptacle."

It is to be particularly noted that while original claims 3 and 4 mentioned the stirring function of the rod, claim 6 omitted this feature, but at the time it was drawn the solicitor unquestionably had in mind the straight form of rod construction *without any stirrer at the end*, for the claim specifies "through the tube into the carbide receptacle."

The Van Pragg patent apparently constituting a complete disclosure of the subject-matter of claims 1, 2 and 6, an affidavit was filed under Rule 75 to show the completion of the invention set forth in claims 1, 2 and 6 before the filing date of the Van Pragg patent (affidavit, Record, p. 140).

In connection with this affidavit a drawing was filed designated as "Exhibit B" which shows the rod extending through the water tube but not having its end formed as a stirrer and the affidavit discloses the fact that Baldwin successfully operated a construction of this character on the 7th day of August, 1901, just a year and eleven months before he filed his application for original letters patent No. 821,580, and yet the

drawing of his original patent did not disclose any such construction.

In the next Office action (Record, p. 143) the Examiner again rejected claims 1, 2 and 6 on the patents of Record, minus Van Pragg, and in the amendment immediately following this Office action, original claims 1, 2 and 6 were cancelled. The next Office action of any material importance was under date of March 6, 1906 (Record, p. 145), in which action claim 4, as it appears in the original patent, was substituted for the previous claim 4 and the rod in this claim was described as "constituting a stirrer to break up slaked carbide."

If the Examiner had considered that the phrase "constituting a stirrer" was intended or did actually include the straight rod construction of the Schmitt British patent, for instance, he probably never would have allowed the claim because original claim 6 was rejected and that rejection acquiesced in, and this claim was unquestionably purposely drawn to cover the straight rod construction. In the argument made by the solicitor for the allowance of claim 4 as appears in the original patent, the following statement is found (Record, p. 146):

"It will therefore be seen that the references mentioned contain no disclosure of a water tube adapted to be embedded in the carbide, and combined therewith a rod or stirrer for breaking up the slaked carbide around the water outlet."

The Examiner took the position that the references relied upon by him did not show a rod, in combination with the other elements, that constituted a stirrer for breaking up the slaked carbide, but the references did show a rod extending through the water tube and projecting beyond the end of the water tube but which was not technically a stirrer within the description of that element as found in the specification of the original

Baldwin patent, or as the term is generally understood by either the layman or the mechanic. A thin wire vertically disposed in any substance and designed for vertical reciprocation only cannot, nor does it, stir the mass in which it is embedded.

It was upon this state of facts that the Court of Appeals for the Seventh Circuit found that the Bleser lamp with the thin cleaning wire extending through the water tube and projecting beyond the end of the water tube along the same longitudinal axis as the tube was not a stirrer within the generally accepted meaning of that word nor did it have the function or operation of the stirrer as *shown* and *described* in the specification of the original Baldwin patent.

The Broadening of the Reissue Patent.

In view of the limitation imposed upon claim 4 of the original patent by the Circuit Court of Appeals for the Seventh Circuit, confining and restricting the claim to a rod with a stirrer at the end thereof and finding that a straight wire projecting into the carbide mass was not a stirrer within the definition as set forth in the Baldwin original patent nor within the common and accepted meaning of the word, it is therefore self-evident that if the specification of the reissue patent has been so changed as to give a different meaning to the word "stirrer" and thus include the straight wire construction, that the reissue patent has therefore been broadened and no further test would seem to be necessary to convince one of that fact.

That it was Baldwin's intention to materially agitate or stir the mass of carbide for a considerable area around the discharge end of the tube is not only evidenced by the drawing in both the original and reissue

patent where the extended arm N' is formed at one end of the rod and a crank or handle formed at the other end of the rod, but the effect of such a construction was particularly desired as evidenced by the description between lines 66 and 80, page 2, of patent No. 821,580:

"As calcium carbide possesses strong absorptive properties, the introduction of water through the tube L will result in the gradual slaking of the material about its outlet; but the lime thus produced becomes gradually less permeable to the water, so that an insufficient quantity of gas is generated to maintain the proper flame. When this becomes noticeable, the rod N is turned, so as to cause the arm N' to break up to a greater or less extent the mass of lime, and in practice I have found that under ordinary conditions this is amply sufficient to insure a substantially uniform generation of gas until all of the carbide in the receptacle G is exhausted."

The stirrer is further described in the specification, beginning line 51, page 2, as a device

"Which on proper manipulation may be used to break up the mass of carbide **surrounding** the outlet of the water duct and which by having become slaked and caked by the action of the water prevents the proper percolation of the latter to the unslaked carbide."

And beginning line 57, page 2, it is stated:

"As such device I employ a stem or rod N which extends down through the tube L and is bent at substantially right angles to form an arm N'."

This is not a case of an ignorant inventor hastening to file his application in the Patent Office and engaging the services of incompetent attorneys. Baldwin had procured other patents and was represented by competent solicitors, and had produced a carbide lamp without a stirrer more than a year and eleven months before he filed his application for his original patent.

The straight wire or rod construction was embodied in Baldwin's commercial miners' lamps before the application was originally filed and yet the inventor goes into the Patent Office, omits to mention or disclose a straight wire construction but does disclose a stirrer at the lower end of his restricting wire and predicates his invention, in part at least, on the stirrer element.

Reissue Specification Change.

Upon the filing of reissue application but two changes were made from the original. First, an unnecessary clause was tacked on to claim 4, namely:

"the rod operating to restrict and thus control the flow of water to the carbide."

This restricting clause was well understood before embodied in the claim and there was no apparent reason for its insertion. The function of this rod is well understood and fully dwelt upon in the specification of the original patent so that this change appears to have been more for the purpose of making it appear to the Examiner than a limitation was being imposed upon claim 4 in the reissue patent, than for any other purpose. The real object, however, in making the change in the claim was to draw the attention of the Examiner to that point while a vital and broadening clause was injected into the specification. The injected subject-matter is found between lines 71 and 89, page 2 of the specification, Record, page 115, beginning with line 12, as follows:

"It will be understood from what has been said that the function of the stirrer is to break up, pierce or disturb the particles of the slaked carbide mass which, when the lamp is in use, forms at the delivery end of the tube. This slaked carbide mass tends to solidify and either shuts the water off altogether

or restricts it so that less water is delivered from the water tube than the lamp demands for efficient operation. As it is sufficient, under certain circumstances, to insure the requisite water flow by so manipulating the stirrer, so as to pierce, break up, and loosen the slaked carbide mass immediately around or at the mouth of the tube, it is obvious that the stirrer need not always be formed with a bent end or so as to extend radially from the mouth of the tube."

Nothing was said in the original specification about **piercing or disturbing** the particles of the slaked carbide mass. The function of the stirrer was to "break up" the mass of carbide "surrounding the outlet of the water tube." The drawing of either the original or reissue patent will not permit of any "piercing" action by the stirrer as it is not shown to be capable of vertical reciprocation for producing a piercing action.

To give claim 4 a broad interpretation so as to include a rod that *pierces* the carbide mass is not warranted by the description of the original patent nor by the mechanical construction disclosed in the drawing of the original patent so that if the claim is interpreted to include a piercing action it is obviously broadened by the additional description of the stirrer injected into the reissue application.

Baldwin Has Included in the Reissue Patent That Which the Patent Office Denied Him in His Original Patent.

The attention of the court is called to cancelled claim 6 of the original patent (Record, p. 135). The elements of this claim are precisely the same as the elements of reissue claim 4, and this claim was rejected by the Patent Office as being fully met by the prior art and such rejection acquiesced in and the claim cancelled. The elements of this claim are as follows:

- (a) A water reservoir,

- (b) a receptacle for calcium carbide,
- (c) a tube extending from the former into the latter so as to be embedded in the mass of carbide,
- (d) a rod extending from a point outside the lamp, through the tube into the carbide receptacle,
- (e) restricting the tube to permit only a predetermined quantity and rate of flow of water into the carbide,
- (f) a valve to cut off the supply of water to the receptacle.

The lamp of the appellant has every element of this rejected claim, including element (f), namely, a valve to cut off the supply of water.

It has been argued that this claim does not specify any stirrer element but this is not true, for the reason that element (d) specifies a rod extending from the point outside the lamp (this is the portion of the rod intended to be grasped by the operator for moving the rod) and the meaning of the phrase "through the tube into the carbide receptacle" can only be construed to mean that the rod or restricting wire extends beyond the end of the water tube. The purpose and intention of this claim was to include the straight wire construction that the Court of Appeals of the Seventh Circuit said was not included in the original patent and which the Examiner in the Patent Office considered to be fully met in the Schmitt British patent No. 15,688, Baldwin 656,874 of August 28, 1900, and the Van Pragg patent No. 705,166 of July 22, 1902, and which Baldwin's attorneys admitted was part of the prior art when original claim 6 was cancelled.

The Schmitt British patent shows every element of cancelled claim 6, including "a rod extending from a point outside the lamp, through the tube into the carbide receptacle," and it was only on the theory that the

wire extending through the water tube in the Schmitt British patent and into the carbide receptacle was not "a rod extending through the water tube and constituting a stirrer to break up slaked carbide around the outlet of the water tube" within the meaning of the Baldwin original patent, that original claim 4 was ever allowed. The straight rod of the Schmitt patent is not a "stirrer" in any sense nor is the straight rod of appellant's lamp a stirrer, and if appellant's rod is a stirrer then the rod of the Schmitt patent is a stirrer, in which event reissue claim 4 is fully anticipated by the Schmitt patent.

Much has been said by the expert in behalf of appellee that the rods extending through the water tubes of the Schmitt patent, Hallows & Tucker 644,910, Gaston 668,288, Handshy 591,132, Mosher 644,439, and various other patents introduced in evidence are not rods of such a type as restrict and control the flow of water, but as stated by the patentee Baldwin, beginning line 25, page 2 of patent No. 821,580:

"This retarding friction may be regulated by varying the size of the wire used,"

and it is obvious from the disclosures in the drawings of the various prior art patents that the wires or rods therein disclosed must necessarily act as restricting members, and this is true regardless of the very positive statements on the part of the appellee's expert that such rods have no restricting function such as contemplated by Baldwin.

It is the opinion of the expert for the appellant that the rods or wires of these various prior art patents all have a restricting function as entered into the regulation of flow of the water to the carbide. In a German publication describing the Schmitt acetylene bicycle lamp, introduced in evidence as Defendant's Exhibit C

(Record, pp. 126 and 127), in the next to the last paragraph, page 127, the following statement is found:

"For regulating the water feed and preventing or to avert the clogging up of the water drop hole a wire *e* is inserted in the tubular end of the water drop valve."

This shows clearly that the wire of the Schmitt British patent has the function of not only serving as a cleaning wire but also as being an element in the regulation of the water feed. But this use of a rod in a water feed pipe for restricting and thus controlling the flow of water was not new with Baldwin and is very fully described in the Mosher patent of February 27, 1900, as follows:

"In use the water being admitted to the tube *D* by the opening of the valve *d* finds its way through the contracted annular space around the rod *F* and sets up the requisite chemical action. This discharge-orifice is of so small area in cross-section that the development of gas-pressure within the generating-chamber will entirely check the flow of water through it when this pressure exceeds that of the column of water inclosed within the tube.

"By the use of the rod several advantages are gained. I am able to reduce the width of the discharge-orifice sufficiently to secure this automatic control of the water, while extending it laterally, so that a very considerable quantity of water may pass through should the demands of the lamp require it. The annular form of orifice is preferable. By using a loose rod in securing such annular form, which rod is capable of longitudinal play within the aperture of the plug *E*, automatic means is provided for dislodging any particles of dirt which may find their way into the discharge-orifice."

As before stated, the lamp of appellant contains every single element of the rejected and abandoned claim 6 of the original patent and by placing such a construction upon reissue claim 4 as will make that claim include a straight wire running through the water tube is giving

to the patentee Baldwin something that the Patent Office refused him more than *seven years prior to the filing of his reissue application.*

Amendment to Claim 4 of Reissue Patent.

There was never any ambiguity as to the meaning of original claim 4, nor did the Court of Appeals for the Seventh Circuit find any difficulty in understanding the function of the rod that extended through the water tube. The statement in the specification of the reissue patent on this point is precisely the same as the statement in the specification of the original patent. By tacking on to original claim 4 the phrase "a rod operating to restrict and thus control the flow of water to the carbide" did not add anything to the claim, nor did it make it any clearer. On the other hand, it did not make it any narrower, because the function of the rod in the original claim was very clear from the description of the original patent.

The only conclusion one can logically reach from such practice is that by centering the attention of the Examiner, in presenting the reissue application, upon an injected phrase in a claim, it would thus appear that the purpose of the reissue was to narrow a claim, which is always permissible, and thus slip into the specification the broadening clause which was made necessary by the decision of the Court of Appeals for the Seventh Circuit if the patentee Baldwin ever hoped to enforce his patent against manufacturers producing the straight wire construction. In this connection the attention of the court is called to a somewhat similar condition that arose in the case of *Leggett v. Avery*, 101 U. S., 257, and upon page 259 the following paragraphs are found which precisely state the rule that should be applied to the facts in this case:

"If, in any case, where an applicant for letters-patent, in order to obtain the issue thereof, disclaims a particular invention, or acquiesces in the rejection of a claim thereto, a reissue containing such claim is valid (which we greatly doubt), it certainly cannot be sustained in this case. The allowance of claims once formally abandoned by the applicant, in order to get his letters patent through, is the occasion of immense frauds against the public. It not infrequently happens that, after an application has been carefully examined and compared with previous inventions, and after the claims which such an examination renders admissible have been settled with the acquiescence of the applicant, he, or his assignee, when the investigation is forgotten and perhaps new officers have been appointed, comes back to the Patent Office, and, under the pretense of inadvertence and mistake in the first specification, gets inserted into reissued letters all that had been previously rejected. In this manner, without an appeal, he gets the first decision of the Office reversed, steals a march on the public, and on those who before opposed his pretensions (if, indeed, the latter have not been silenced by purchase), and procures a valuable monopoly to which he has not the slightest title. We have more than once expressed our disapprobation of this practice. As before remarked, we consider it extremely doubtful whether reissued letters can be sustained in any case where they contain claims that have once been formally disclaimed by the patentee, or rejected with his acquiescence, and he has consented to such rejection in order to obtain his letters patent. Under such circumstances, the rejection of a claim can in no just sense be regarded as a matter of inadvertence or mistake. Even though it was such, the applicant should seem to be estopped from setting it up on an application for a reissue."

In both the Leggett case and in the present case there was a direct issue of novelty based upon specific prior patents *to which the inventor yielded* (as the inventor Baldwin did in this case when he abandoned original

claim 6 that contains every element of the appellant's construction). To go back into the Patent Office after a lapse of seven years and obtain by way of reissue letters patent all that had previously been rejected is a fraud not only against the appellants but against the public as well.

The Prior Art.

There are a number of factors that enter into the regulation and control of the flow of water in acetylene lamps that were all well recognized and understood long prior to the Baldwin original or reissue patent in suit. In the appellant's lamp the following factors enter into the regulation of the water:

(1) The valve which admits the water into the tube leading to the carbide chamber;

(2) The back-pressure generated in the carbide chamber as the gas is formed which automatically holds back the column of water in the tube according to the degree of pressure of the gas;

(3) The drawing or absorptive effect of the carbide in the container, since carbide has a strong affinity for water;

(4) The restriction of the orifice through which the water passes or the water tube;

(5) The obstructive tendency of the carbide sludge at the bottom of the water tube which tends to hold back the water;

(6) A rod or other form of instrument to clean the water tube or orifice through which the water flows;

(7) The weight of the column of water or hydraulic head;

(8) The vibration to which the lamp is subjected;

(9) The size of the burner used on the lamp.
(Record, p. 59, Q. 10 and A.)

Every one of these elements or factors that enter into the regulation and control of the appellants' lamp are found in the Schmitt British patent, as follows:

The valve is found at the lower end of the hollow stem *a*. This valve co-operates with the valve-seat formed at the upper end of the water tube *f*. This valve may be raised or lowered by rotating the handle which appears just above the top of the water container. As to back-pressure, gas generated in the carbide container has but two outlets, one through the burner and the other through the water inlet, and the pressure of the gas generated in the container necessarily restricts the flow of water. This is explained fully in the specification of the patent.

The water tube outlet in the carbide container of the Schmitt patent is about mid-height of the container. It is customary to fill the carbide containers approximately one-half full of carbide, and since carbide swells to double its volume in expanding (Record, p. 80, paragraph 145), it is quite apparent that the lower end of the water tube in the Schmitt patent would be either surrounded by carbide if the lamp was properly charged or it would be only a matter of moments before the lower end of the water tube would be surrounded by carbide if less than the average charge of carbide was placed in the lamp, so that the absorbtive property of the carbide would have its effect upon the water column.

The orifice at the lower end of the water tube in the Schmitt structure is obviously restricted by a wire and while the Schmitt British patent describes this wire as a cleaning wire, it is additionally described in Defendant's Exhibit C as having the function of "regulating

the water feed." That it restricts to a certain extent is admitted by the appellee's expert (Record, p. 93, X-Q. 170):

"X-Q. 170. What I asked is, doesn't that wire restrict that orifice?

"A. No, not to any extent.

"X-Q. 171. So, if you take the wire out the water will flow through in the same manner?

"A. Oh, no, of course, its presence there must necessarily make the opening smaller than it would be if it were not there. There is no doubt about that."

The stoppage of the flow of water by the carbide is self-evident, for as soon as the mouth of the water tube becomes embedded in the carbide, the obstructive effect of the carbide will be present.

One of the functions of the rod is described in the patent for the purpose of cleaning the orifice.

The water head or hydraulic pressure is recognized in the Schmitt patent.

The vibration factor is also recognized in the Schmitt patent and is specially provided for by the particular curvature in the water tube G.

This patent is attacked as a valid reference by the appellee mainly on two grounds. First, that the wire which extends through the water tube is merely a cleaning wire and does not serve the purpose of a restricting wire or rod within the meaning of the Baldwin patent; and, second, that the lower end of the water tube is not adapted to be embedded in the carbide and hence the lower end of the wire extending through the water tube cannot perform the function of a stirrer.

That the wire of the Schmitt patent must necessarily restrict and thus must necessarily control the flow of water to a certain extent is self-evident and admitted by appellee's expert. The fact that there is a valve in connection with the water control so that water regu-

lation may be accomplished by such valve in addition to the other regulating factors is just as true of the appellant's lamp as it is of the Schmitt lamp, for each is provided with a valve.

On the second point of alleged differentiation there is considerable space above the lower end of the water tube for taking care of the expansion of the carbide. The lamp, properly filled, or improperly filled with too much carbide, will cause the lower end of the water tube to be immediately embedded in the carbide mass. If less than the normal amount of carbide is introduced at the initial charge, it will only be a short time before the expanded carbide has surrounded the outlet of the water tube. When the slaked carbide has surrounded the outlet of the water tube the wire of the Schmitt patent performs precisely the same function as the wire in appellant's construction. By vertical reciprocation the slaked carbide immediately below the water tube is pierced, allowing water to enter the orifice made when the rod is raised vertically and thus increasing the gas generation. This is in no sense a stirring action, but is rather a pumping action (Record, p. 38, X-Q. 44):

"X-Q. 44. Is there any different effect in reciprocating the rod vertically or turning it upon its own axis—is there any different effect in increasing or decreasing the flow of water?

"A. Well, it is possible that when you vertically reciprocate the rod you might create a sort of pumping action because if you draw the rod far enough into the tube you will have a water filled space under the rod and then when you push the rod down you will expel that water."

The function of the stirrer in the original patent was to "break up the mass of carbide surrounding the outlet to the water duct." Upon the injection of the sludge ball theory into this case by appellee's expert (and no

mention is made of any sludge ball in the original or reissue patent), it now appears that the breaking up of the mass of carbide around the water duct is fully accomplished by the formation of "a crevice one-half of one-hundredth of an inch" (Record, p. 37, A to X-Q. 33).

If the formation of a crevice one-half of one-hundredth of an inch in the carbide mass is breaking up the mass surrounding the outlet of the water tube as contemplated by the original patent, then the wire of the Schmitt patent will form such an infinitesimal crevice just as well as the straight wire employed in appellee's structure, but not shown in his original or reissue patent. On the other hand, if the wire of the Schmitt patent performs the same function as the wire in appellant's construction, then the Baldwin reissue patent, as to claim 4, is either invalid if a broad interpretation is placed upon the claim or is not infringed if the interpretation is placed upon the claim as given by the Court of Appeals for the Seventh Circuit.

The Handshy patent No. 591,132 shows a rod that extends through the water tube and into the carbide receptacle, and this rod necessarily must have the function of restricting and thus controlling the flow of water to a certain degree.

The Hallows & Tucker patent No. 644,910 very clearly shows a rod extending through the water tube and capable of being manipulated from the top of the lamp.

The Gaston patent No. 668,288 not only shows a rod extending through the water tube, but this rod is provided with a grate 35, the function of which is to stir the carbide mass at the lower end of the water tube.

The Mosher patent No. 644,439 discloses the broad idea of restricting the water tube for the purpose of securing automatic control. These patents constitute

the pertinent prior art and are thought to disclose every element of claim 4 of the reissue patent, the Schmitt British patent disclosing the precise combination of elements of the claim at issue, providing the rod of the Schmitt patent is considered the equivalent of the stirrer of the Baldwin reissue patent.

Appellants' Construction Does Not Infringe, Because it Embodies Every Element of Cancelled Claim 6.

In discussing the file history of the patent it was pointed out that in the original and cancelled claim 6 a valve was included as one of the elements of this claim. The drawing filed by Baldwin, identified as Exhibit B in the file history and appearing upon the second sheet of drawings immediately following Record, page 140, a valve is shown which was the valve element included in cancelled claim 6. The patents of the prior art were held to include every element of original claim 6 when the valve was made an element of the combination. It would therefore clearly seem to follow that the Justrite lamp (which embodies a valve) does not infringe because it contains all of the elements of cancelled claim 6, and reissue claim 4 cannot be so construed as to include a valve that was expressly disclaimed when claim 6 was cancelled. Claim 4 of the original patent which was submitted after rejection of original claim 6 expressly omits the valve element, and while it is recognized that after the cancellation of a claim a broader claim may be thereafter submitted, nevertheless where an element is omitted in a subsequent claim and patentable novelty is argued for the allowance of the new claim submitted over the rejected claim by reason of the omission of an element; it is thought that the patentee should be thereafter estopped from urging or contending that the new claim can be

so construed as to cover the subject-matter embodied in the previously cancelled claim. The argument presented in the file history for the allowance of claim 4 of the original patent unmistakably shows that Baldwin distinguished his invention from the prior art by reason of the fact that his lamp did not embody a valve which would require "troublesome adjustment" that was "easily disturbed" and not "suitable for use by unskilled persons." By omitting the valve certain results were accomplished which are not to be obtained in a structure embodying all of the other elements of claim 4 plus the valve. Inasmuch as appellants' lamp employs a valve, and therefore embodies every element of original claim 6, and the elements of that claim are dedicated to the public, it is urged that appellants' lamp cannot constitute an infringement when it embodies the discarded and abandoned subject-matter of the original application.

Appellants' Lamp Does Not Infringe, Because it Has No Stirrer.

The lamp as made by the Justrite Company is not provided with any stirrer within the meaning of the original patent. If the reissue patent is no broader than the original patent, then reissue claim 4 is not broad enough to cover appellants' construction, being expressly limited to the stirrer formed at the end of the rod.

If the limitation imposed upon original claim 4 by the Court of Appeals for the Seventh Circuit is found to be incorrect, there are but two conclusions that can be drawn from such a finding: (a) That the reissue patent is for a different invention; (b) that a broader interpretation must be given the reissue than was given

the original to include in the reissue the straight end of the rod as the mechanical equivalent of the stirrer.

If the reissue was for a different invention it is invalid under the decision of *Huber v. Nelson Mfg. Co.*, 148 U. S., 270, in which the court said:

“The failure to claim the particular combination not claimed in the original patent, but claimed in the reissue, was not due to any such inadvertence or mistake as would authorize the claiming of it in the reissue, and that the failure to claim such combination originally occurred under such circumstances and was accomplished with such full knowledge of all material facts, as to amount to an abandonment of that particular combination to the public.”

It was held in the case of *White v. Dunbar*, 119 U. S., 47, that the specification cannot be resorted to for the purpose of changing the claim and making it different from what it is.

In *McCarty v. R. R. Co.*, 160 U. S., 110, 116, the court said:

“We know of no principle of law which would authorize us to read into a claim an element which is not present, for the purpose of making out a case of novelty or infringement.”

Swain Turbine Co. v. Ladd, 102 U. S., 408.

If a broader interpretation is given to the reissue patent than was given to the original patent by Judge Kohlsaat, then the reissue is clearly void under the rule of law as laid down in *Miller v. Brass Co.*, 104 U. S.

The patentee Baldwin in his reissue patent seeks to change the stirrer of the original patent into a straight end that was denied him in his original patent; he seeks to have reissue claim 4 so construed as to include a valve as part of the combination, which was denied him, and to which denial he acquiesced when original claim 6 was cancelled, and by tacking onto original claim 4

the functional statement contained in the last three lines of reissue claim 4, he now seeks to use this restricting clause to justify his contention that the claim, has not been broadened, whereas the addition of this clause to the claim has no relation or bearing whatsoever to the subject-matter added to the specification of the reissue.

Intervening Rights.

The appellant, Justrite Manufacturing Company, first placed an acetylene lamp for miners' use upon the market in July, 1911 (Record, p. 65, Q. 3). The 1911 lamp is almost identical in its construction to the lamp offered in evidence by the appellee as of the Justrite manufacture and upon the sale of which this suit is based. The precise construction of lamp alleged to infringe the reissue patent in suit was placed upon the market by the Justrite Company in September, 1911. Neither construction infringed original patent No. 821,580.

There was a period of more than a year and one-half between the time the Justrite lamp first went on the market and the time that the application for the Baldwin reissue patent was filed, and a period of nine months elapsed after the decision of the Court of Appeals in the Bleser case before Baldwin took any steps whatsoever to reissue his original patent.

These facts, coupled with the disclosure of the file history of the patent, and a period of seven years for a study of the patent to ascertain if any mistake had been made, establishes an equitable estoppel.

In the case of *Parker v. Yale*, 123 S. C., 87, the court said:

"In the present case the infringing clock was made by the defendant Lane more than six months

before the reissue in suit was applied for. . . . This, therefore, is a case of the amendment of a patent so as to cover the improvement not covered by the patent and which came into use by others than the patentee and his licensee, free from the protection of the patent."

Other cases holding to the same effect are as follows:

Miller v. Brass Co., 104 S. C., 350;

Coon v. Wilson, 113 U. S., 268;

White v. Dunbar, 119 U. S., 47; and

Topliff v. Topliff, 145 U. S., 156.

The Law of Reissue Patents as Laid Down By the Supreme Court.

The provision of the statutes for the reissue of letters patent is, in part, as follows:

"Sec. 4916. Whenever any patent is inoperative or invalid, by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new, if the error has arisen by inadvertence, accident, or mistake and without any fraudulent or deceptive intention, the Commissioner shall, on the surrender of such patent, and the payment of the duty required by law, cause a new patent for the same invention, and in accordance with the corrected specification to be issued to the patentee."

The Supreme Court has considered the following cases relating to reissued letters patent, beginning with *Miller v. Brass Co.*, 104 U. S., 350.

In thirty-six of the cases considered the reissued patents were declared invalid on one or more of the following grounds:

- (a) Expanded claims;
- (b) New subject-matter;
- (c) Intervening rights;

- (d) Expanded claims more than two years after issue
• of original;
- (e) Laches;
- (f) New matter not present in original specification or patent.

The reissues considered in the following cases were applied for at various periods between two and fourteen years from the date of the original patent, and are set forth under Group A.

GROUP A.

Matthews v. Machine Co., 105 U. S., 54.
Bantz v. Franz, 105 U. S., 160.
Gosling v. Roberts, 106 U. S., 39.
Hoffheins v. Russell, 107 U. S., 132.
Gage v. Harring, 107 U. S., 640.
Clements v. Odorless Co., 109 U. S., 641.
Turner Co. v. Dover Co., 111 U. S., 319.
Mahn v. Harwood, 112 U. S., 354.
Torrent Co. v. Rodgers, 112 U. S., 659.
Coon v. Wilson, 113 U. S., 268.
Wollensak v. Reiher, 115 U. S., 96.
Brown v. Davis, 116 U. S., 237.
White v. Dunbar, 119 U. S., 47.
Newton v. Furst Co., 119 U. S., 373.
Ives v. Sargent, 119 U. S., 652.
Hartshorn v. Saginaw Co., 119 U. S., 664.
Worden v. Searles, 121 U. S., 14.
Beedle v. Bennett, 122 U. S., 71.
Parker v. Yale Clock Co., 123 U. S., 87.
Dryfoos v. Wiese, 124 U. S., 32.
Matthews v. Mfg. Co., 124 U. S., 347.
Hoskin v. Fisher, 125 U. S., 217.
Yale Lock Co. v. James, 125 U. S., 447.
Cornell v. Weidner, 127 U. S., 261.
Flower v. Detroit, 127 U. S., 563.

Farmer's Co. v. Corn Planter, 128 U. S., 506.
Pattee v. Kingman, 129 U. S., 294.
Yale Lock Co. v. Bank, 135 U. S., 342.
Electric Co. v. Boston Co., 139 U. S., 481.
Freeman v. Asmus, 145 U. S., 226.
Huber v. Nelson Co., 148 U. S., 270.
Leggett v. Standard Oil Co., 149 U. S., 287.
Woolensak v. Sargent, 151 U. S., 221.
Dunham v. Dennison Co., 154 U. S., 103.
Olin v. Timken, 155 U. S., 141.
Eby v. King, 158 U. S., 366.

GROUP B.

Because of abandonment of certain subject-matter during the proceedings in the Patent Office, four reissue patents were held invalid in the following cases:

Yale Lock Co. v. James, 125 U. S., 447.
Yale Lock Co. v. Bank, 135 U. S., 342.
Dobson v. Lees, 137 U. S., 258.
Corbin v. Eagle Co., 150 U. S., 38.

GROUP C.

The Supreme Court found non-infringement, and in so finding, did not pass upon the validity of the reissued claims in fifteen cases, as follows:

Hoffheins v. Russell, 107 U. S., 132.
Duff v. Sterling Pump Co., 107 U. S., 636.
Fay v. Cordesman, 109 U. S., 408.
Bussey v. Mfg. Co., 110 U. S., 131.
Cochrane v. Badische, 111 U. S., 293.
Rowell v. Lindsay, 113 U. S., 97.
Wollensak v. Reiher, 115 U. S., 87.
Brown v. Davis, 116 U. S., 237.
Newton v. Furst Co., 119 U. S., 373.
California Co. v. Schalicke, 119 U. S., 401.
Plummer v. Sargent, 120 U. S., 442.

Crawford v. Heysinger, 123 U. S., 589.
Bene v. Jeantet, 129 U. S., 683.
National Co. v. Commissioners, 149 U. S., 48.
Black Diamond Co. v. Coal Co., 156 U. S., 611.

GROUP D.

The reissued patents were either held to be invalid for one or more of the following reasons:

- (a) Want of invention;
- (b) Aggregation;
- (c) Public use;
- (d) Anticipation;

in approximately thirty-one cases, as follows:

Pickering v. McCullough, 104 U. S., 310.
Egbert v. Lipmann, 104 U. S., 333.
Stow v. Chicago, 104 U. S., 547.
Heald v. Rice, 104 U. S., 737.
Johnson v. Rd. Co., 105 U. S., 539.
Guidet v. Brooklyn, 105 U. S., 550.
Packing Co. cases, 105 U. S., 566.
Gosling v. Roberts, 106 U. S., 39.
Slawson v. Grand St. Rd. Co., 107 U. S., 649.
Blake v. San Francisco, 113 U. S., 679.
Thomson v. Boisselier, 114 U. S., 1.
Western Co. v. Ansonia Co., 114 U. S., 447.
Beecher Co. v. Atwater Co., 114 U. S., 523.
Miller v. Foree, 116 U. S., 22.
Preston v. Manard, 116 U. S., 661.
Yale Co. v. Greenleaf, 117 U. S., 554.
Gardener v. Herz, 118 U. S., 180.
Hartshorn v. Saginaw Co., 119 U. S., 664.
Andrews v. Hovey, 123 U. S., 267.
Andrews v. Hovey, 124 U. S., 694.
Andrews v. Cone, 124 U. S., 720.
Weir v. Morden, 125 U. S., 98.
Flower v. Detroit, 127 U. S., 563.

- Peters v. Hansen*, 129 U. S., 541.
Collins v. Coes, 130 U. S., 56.
Brush v. Condit, 132 U. S., 39.
Day v. Fair Haven, 132 U. S., 98.
Patent Co. v. Glover, 141 U. S., 560.
Wollensak v. Sargent, 151 U. S., 221.
Eby v. King, 158 U. S., 366.
Lehigh Co. v. Kearney, 158 U. S., 461.

GROUP E.

In three cases the validity of the reissued patents was not passed on and the cases turned on questions of evidence, damages, or foreign patents, the cases are as follows:

- Oregon v. Excelsior Co.*, 132 U. S., 215.
Commercial Co. v. Fairbank Co., 135 U. S., 176.
McCleary v. Canal Co., 141 U. S., 459.

GROUP F.

Infringement was found in eight cases, as follows:

- Cotton Co. v. Simmons*, 106 U. S., 89.
Thomson v. Wooster, 114 U. S., 104.
Yale v. Sargent, 117 U. S., 536.
Eames v. Andrews, 122 U. S., 40.
Beedle v. Bennett, 122 U. S., 71.
Hurlbut v. Schillinger, 130 U. S., 456.
Topliff v. Topliff, 145 U. S., 156.
Hobbs v. Beach, 180 U. S., 383.

GROUP G.

In the reissued patents were held not to be for the same invention as for the original in the two following cases:

- Moffitt v. Rogers*, 106 U. S., 423.
McMurray v. Mallory, 111 U. S., 97.





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The Law as Applied to the Facts in This Case.

(1) It is the contention of the appellant that the additional matter injected into the reissue application very materially broadened the alleged invention of the original patent, as a comparison of the pertinent subject-matter of the original patent and the corresponding subject-matter of the reissue patent will show (the subject-matter added to the reissue appears in large type) :

ORIGINAL PATENT.

(Specification, lines 47 to 80, page 2.)

"In some cases, however, there is employed in connection with the means for introducing the water into the mass of carbid a device in the nature of a stirrer, which on proper manipulation may be used to break up the mass of carbid surrounding the outlet of the water-duet and which by having become slaked and caked by the action of water prevents the proper percolation of the latter to the unslaked carbid in the receptacle G, Fig. 1. As such device I employ a stem or rod N, which extends down through the tube L and is bent at substantially right angles to form an arm N'. This rod may form a prolongation of the valve-stem M' of Fig. 2 or in case no

REISSUE PATENT.

(Specification, lines 54 to 105, page 2.)

"In some cases, however there is employed in connection with the means for introducing the water into the mass of carbid a device in the nature of a stirrer, which on proper manipulation may be used to break up the mass of carbid surrounding the outlet of the water duct and which by having become slaked and caked by the action of the water prevents the proper percolation of the latter to the unslaked carbid in the receptacle G, Fig. 1. As such device I employ a stem or rod N, which extends down through the tube L and is bent at substantially right angles to form an arm N'. This rod may form a prolongation of the valve-stem M' of Fig. 2 or in case no

valve is used may extend from the top of the lamp down through the water-reservoir, as shown in Fig. 3.

“As calcium carbid possesses strong absorptive properties, the introduction of water through the tube L will result in the gradual slaking of the material about its outlet; but the lime thus produced becomes gradually less permeable to the water, so that an insufficient quantity of gas is generated to maintain the proper flame. When this becomes noticeable, the rod N is turned, so as to cause the arm N' to break up to a greater or less extent the mass of lime, and in practice I have found that under ordinary conditions this is amply sufficient to insure a substantially uniform generation of gas until all of the carbid in the receptacle G is exhausted.”

valve is used may extend from the top of the lamp down through the water-reservoir, as shown in Fig. 3.

It will be understood from what has been said that the function of the stirrer is to break up, pierce or disturb the particles of the slaked carbid mass which, when the lamp is in use, forms at the delivery end of the tube. This slaked carbid mass tends to solidify and either shuts the water off altogether or restricts it so that less water is delivered from the water tube than the lamp demands for efficient operation, as it is sufficient, under certain circumstances, to insure the requisite water flow by so manipulating the stirrer, as to pierce, break up, or loosen the slaked carbid mass immediately around or at the mouth of the tube, it is obvious that the stirrer need not always be formed with a bent end or so as to extend radially from the mouth of the tube.

“As calcium carbid possesses strongly absorptive properties, the introduction of water through the tube L will result in the gradual slaking of the material about its outlet; but the lime thus produced becomes gradually less permeable to the water, so that an insufficient quantity

of gas is generated to maintain the proper flame. When this becomes noticeable, the rod N is turned, so as to cause the arm N' to break up to a greater or less extent the mass of lime, and in practice I have found that under ordinary conditions this is amply sufficient to insure a substantially uniform generation of gas until all of the carbid in the receptacle G is exhausted."

The original patent being obviously broadened by the additional subject-matter incorporated in the reissue specification is therefore invalid under the rule of law as laid down in *Miller v. Brass Co.*, 140 U. S., 350; *Coon v. Wilson*, 113 U. S., 268; *Mahn v. Harwood*, 112 U. S., 354; *Topliff v. Topliff*, 145 U. S., 156, as well as other cases coming under Group A.

(2) Appellants' construction embodies all of the elements of original and abandoned claim 6 and reissue claim 4 cannot be expanded to embrace subject-matter specifically disclaimed and abandoned in original claim 6. (*Leggett v. Avery*, 101 U. S., 256.)

(3) That the appellee is guilty of laches and that the intervening rights created by the manufacture and sale by appellant of the alleged infringing structure more than a year and a half before the application for the reissue patent was filed, is such a right as was recognized by the Supreme Court in *Powder v. Powder*, 98 U. S., 126, and in *Coon v. Wilson*, 113 U. S., 268.

Conclusion.

In view of the facts above set forth our conclusions are as follows:

a. That the Baldwin original patent No. 821,580 fully and clearly, without ambiguity or obscurity, describes and claims a specific invention complete in itself and is not inoperative or invalid by reason of an insufficient specification, and that the reissue patent in suit cannot be sustained as a valid patent when its sole purpose is to serve so as to expand and generalize claim 4 in order to embrace subject-matter not specified, described or shown in the drawing of the original patent.

b. That appellants' construction embodies all of the elements of original and abandoned claim 6, and that reissue claim 4 cannot be expanded to embrace subject-matter specifically disclaimed and abandoned in original claim 6.

c. That if reissue claim 4 is valid, it must be limited to the precise combination of elements therein set forth, and cannot be construed so broadly as to include the same combination of elements plus a shut-off valve; hence there can be no infringement of reissue claim 4.

d. That reissue claim 4 is limited to a construction wherein the restricting rod has a stirrer at its end and that appellants' construction does not infringe because the rod in appellants' construction does not have a stirrer at its lower end.

e. That it is unjust to enjoin the appellants from the manufacture or sale of the lamp as made by the Justrite Manufacturing Company when the original patent was not reissued until after seven years from the date of its grant and when the appellant, Justrite Manufacturing Company, had its lamp on the market approximately a year and seven months before the application

for the reissue patent was filed and approximately a year and eight months before the date of the reissue patent.

f. That claim 4 of the reissue patent cannot be expanded by the insertion of broadening subject-matter in the specification of the reissue patent after a final adjudication by the Court of Appeals for the Seventh Circuit defining and restricting original claim 4.

g. That claim 4 of the reissue patent is invalid for want of patentable novelty and invention in view of the prior art.

Respectfully submitted,

JAMES R. OFFIELD.

CHARLES K. OFFIELD,

Of Counsel for Appellants.

FILED
OCT 5 1917
JAMES D. MAHER

Supreme Court of the United States.

OCTOBER TERM, 1916.

No. **67**

ABERCROMBIE & FITCH COMPANY and JUSTRITE
MANUFACTURING COMPANY,

Petitioners,

vs.

FREDERICK B. BALDWIN and JOHN SIMMONS COMPANY,

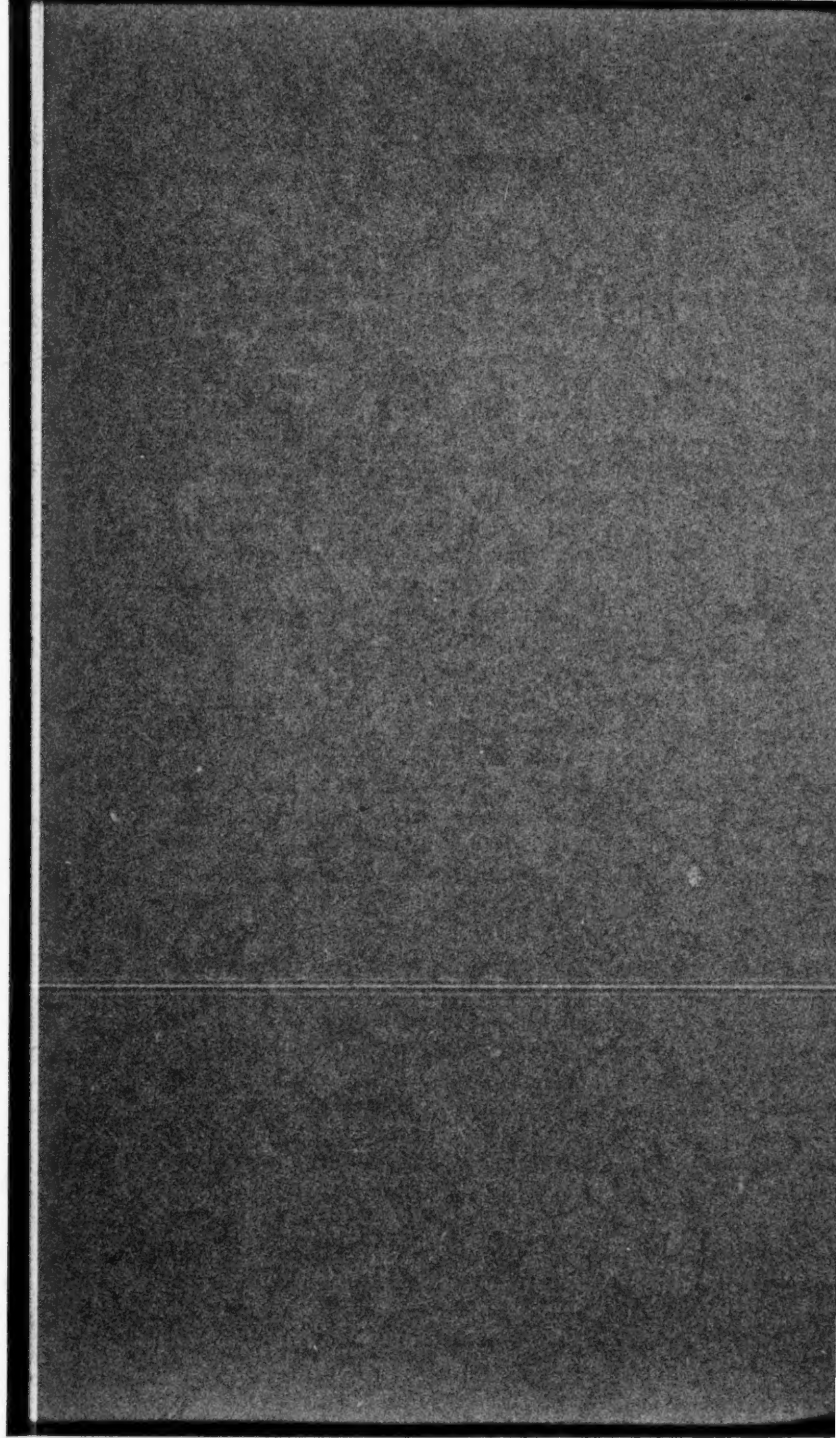
Respondents.

BRIEF FOR RESPONDENTS.

On Writ of Certiorari to the United States Circuit Court of Appeals
for the Second Circuit.

JAMES Q. RICE,

Counsel for Respondents.



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Supreme Court of the United States.

OCTOBER TERM, 1916.

No. 323.

ABERCROMBIE & FITCH COMPANY and
JUSTRITE MANUFACTURING COM-
PANY,

Petitioners,

vs.

FREDERICK E. BALDWIN and JOHN
SIMMONS COMPANY,
Respondents.

BRIEF FOR RESPONDENTS.

This is a patent case, the patent involved being reissue patent No. 13,542, granted March 11, 1913, to F. E. Baldwin, one of the respondents and plaintiffs, for an acetylene gas generating lamp, the co-plaintiff and other respondent being John Simmons Co., licensee and sole manufacturers under the patent. The petitioners-defendants are Abercrombie & Fitch Co., a dealer, and Justrite Mfg. Co., the manufacturer of defendants' lamp.

The case comes here on writ of *certiorari* to the Court of Appeals of the Second Circuit which affirmed (Op. Tr., p. 155), the decision of the District Court for the Southern District of New York holding the patent valid and infringed (Op. MAYER, J., Tr., p. 97),

Prior to the trial of this case a suit was tried on this reissued patent in the Western District of Pennsylvania by the same plaintiffs against a miner's acetylene cap lamp exhibiting substantially the same construction as the lamp involved in this suit, the bill also alleging unfair competition, the defendant being Grier Bros. Co. Judge ORR held the patent valid and infringed and found unfair competition (Tr., p. 118). The Court of Appeals of the Third Circuit affirmed as to unfair competition but reversed on the patent question involved, the practical effect of the decision being to invalidate the

reissue because applied for seven years after the grant of the original patent.

Both opinions in the Second Circuit were rendered after the decision of the Court of Appeals of the Third Circuit.

This case comes here, therefore, because of differing decisions in different circuits as to the validity of the reissue involved.

In 1909, less than three years after the grant of the original patent for the reissue here in suit, and three years after Baldwin had put upon the market the exact structure of miner's cap lamp involved in this suit, a suit was brought in the Southern District of Illinois against one Bleser, the bill alleging infringement of an earlier patent to Baldwin, No. 665,874, for Acetylene Gas Lamps, August 28, 1900, and also of the original, No. 821,580, of the reissue here involved. Both patents were held valid and infringed by the District Court. The Court of Appeals of the Seventh Circuit, in 1912, affirmed (199 F., p. 133) the finding of the Court below on one of the claims of patent 656,874, but held the original of the reissue not infringed, on grounds which showed a misconception of the invention intended to be set forth in the patent. The reissue was accordingly applied for in Feb., 1913, on an amended specification which more clearly defined the original invention, and was duly granted.

**THE REISSUE WAS NOT APPLIED FOR TO
COVER ANY IMPROVEMENT MADE BY
BALDWIN OR ANY COMPETITOR AFTER
THE GRANT OF THE ORIGINAL PATENT.**

The District Court in sustaining this reissue said :

“ Reissues often present troublesome questions, but the ultimate test, I think, is good faith ” (Op. *MAYER, J.*, T., p. 101).

This test of good faith is laid down by this Court in *Hobbs v. Beach*, 180 U. S., 383, where, in sustaining the reissue, it said :

“ we see no reason to doubt that it was applied for in good faith, and with the design only of securing to the patentee what he had actually invented.”

This is undoubtedly the controlling test in applying the reissue statute. This statute is remedial, intended to give the

inventor the fruits of an invention honestly intended to be disclosed in the specification but which he has failed to obtain through accident, inadvertence or mistake. The statute, therefore, should be construed in accordance with the broad principles of equity, liberally applied, if necessary, to carry out its purpose. As stated by this Court in *Topliff v. Topliff*, 145 U. S., 156 :

“ The object of the patent law is to secure to inventors a monopoly of what they have actually invented or discovered, and it ought not to be defeated by a too strict and technical adherence to the letter of the statute, or by the application of artificial rules of interpretation.”

Every reissue invalidated by this Court has been so found because the patentee, not proceeding in good faith, was endeavoring by reissue to sweep within his monopoly something produced by him, or a competitor, after the grant of his original patent, or something dedicated to the public.

As stated in *Giant Powder Co. v. Powder Works*, 98 U. S., 126, and quoted with approval in *Topliff v. Topliff*, 145 U. S., 156 :

“ The danger to be provided against was the temptation to amend a patent so as to cover improvements which might have come into use, or might have been invented by others, after its issue.”

And again in *Eames v. Andrews*, 122 U. S., 40 :

“ Those cases in which this court has held reissues to be invalid were of a different character, and were cases where by the reissued patent the scope of the original was so enlarged as to cover and claim as a new invention that which was either not in the original specification, as a part of the invention described, or if described, was, by not being claimed, virtually abandoned and dedicated to public use.”

No such state of affairs obtains in this case. The original patent was granted in May, 1907, but Baldwin made the exact miner's cap lamp here involved in December, 1905 (Tr., 17, Q. 13), five months before the grant of his original patents and marketed it in January, 1906.* At this time a

* “ As early as December, 1905, however, the miner's cap lamp was made and early in 1906 it was put on the market, and in this was the straight rod, which, among other things, has characterized the commercial lamp ever since.

“ Thus, even before the grant, Baldwin exemplified practically in an actual device which went extensively into use, the precise combination which is now before us ” (Op. *MAYER, J.*, Tr., p. 101).

miner's acetylene cap lamp was unknown (Tr., 95, Q. 7), though what were known as gang lamps—lamps affording sufficient light for a gang of workmen—had been used in mines to some extent. And Baldwin, as we shall later show (Bf., p. 23), embodied the structure here in dispute in a gang lamp before he filed his patent application.

Thus Baldwin was the pioneer in acetylene cap lamps and he originated and developed the market with the identical lamp here involved. This original cap lamp is shown in the Engineering and Mining Journal, July, 1906, Ex. No. 7, and plaintiff's commercial lamp in Ex. 9 (see cut opposite page, which also shows the present commercial lamp).

Justrite Co. did not begin to market its lamp until *five years later* (July, 1911, Tr., 65, Q. 3), after all opposition had been overcome, development work done, and the business established on a profitable basis. Further its lamp does not contain a single novel or original feature. It is a Chinese copy, aside from exterior shape, of Baldwin's original lamp.

The Baldwin reissue, therefore, was not taken to cover any improvement invented or produced by these defendants or anyone else after the grant of the original patent. It covers only that which is admittedly new and original with Baldwin, and produced by him before his original patent was applied for.

Nor did the patentee dedicate anything to the public. His lamps were marked under the patent in suit and the Seventh Circuit suit, where substantially this lamp was involved, was brought as soon as the infringement was known (Tr., 20, Q. 37). Therefore the public and these defendants were fully warned that the patentee regarded this lamp as within his patent.

The introduction of this new lamp was not effected without difficulty. Miners, accustomed to the use of candles and oil lamps, were ignorant of carbid and had to be taught its use. Further, the state inspectors in many states opposed the introduction of this new illuminant.

The advantages of the Baldwin miner's cap lamp and the difficulties in the way of its introduction are fully set out (Tr., pp. 17-19, Qs. 21-7). These difficulties were, however, finally overcome and the record shows that over a million of these lamps had been sold by Baldwin and his licensee (Tr., p. 17, Q. 19).

PLAINTIFFS' EXHIBIT NO. 7

Reproduced from

Engineering & Mining Journal, July 21, 1906 p. 11
Acetylene Lamps for Mines



FIG. 1.

It has been proved that lighting by acetylene is cheaper than any other practical method; the quality of the light is well adapted to mining and no smoke is formed. Another advantage of using acetylene is that it consumes only one-fifth as much oxygen, and gives off only one-sixth as much CO_2 as oil lamps or candles. The fact that a lamp burning acetylene gas will not blow out in strong currents of air, that it will burn in light or foul air, and that when constructed properly it is safe, are all conditions that go to prove the value of this kind of lighting.

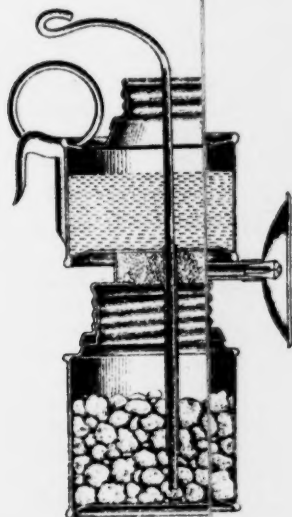
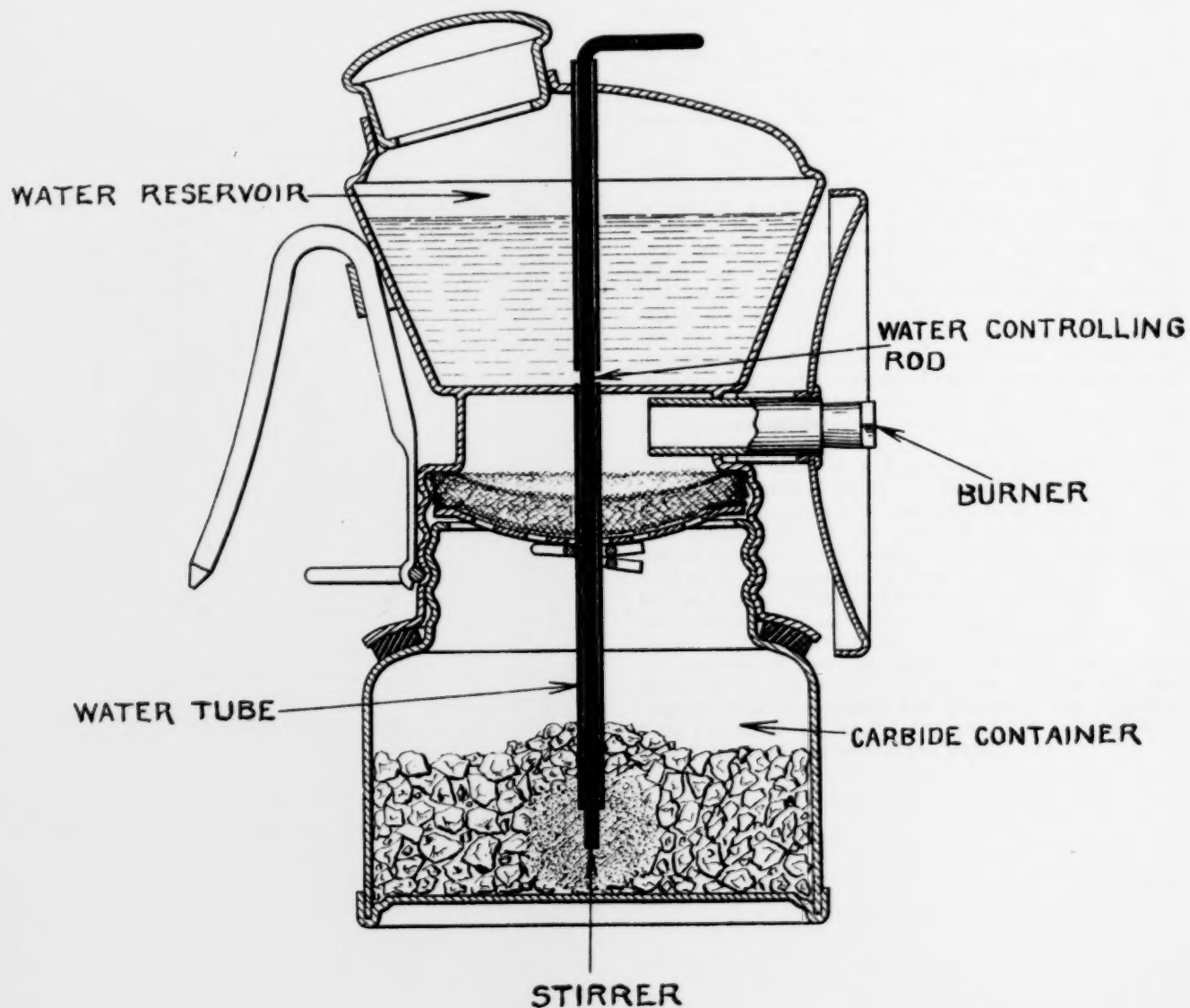


FIG. 3.

A large copper mine where acetylene lamps were introduced had some interesting figures. In this mine 350 men were employed 360 days in year. Candles for these 350 miners cost 3c. per day per man, in 360 days amount to \$10,080. In order to use acetylene in place of candles, the management purchased 350 lamps at \$4.50 each, making a total cost of \$1575. In all these lamps combined, 175 lb. of carbide at 6c. per lb. was used each day, which cost \$3780 for 360 days, consequently, the use of acetylene at this mine, the first year, effected a saving of \$4725. This saving was increased the second year to \$6125 after deducting full costs of repairs and replacement of lamps.

PLAINTIFFS' EXHIBIT No.9.
"PLAINTIFFS COMMERCIAL LAMP"



The Court of Appeals of the Second Circuit (Tr., p. 159) found :

" The plaintiff, Baldwin, first began to market an Acetylene Miner's Cap Lamp in January, 1906. At that time there was no other acetylene cap lamp on the market. Prior to the introduction of the Baldwin lamp miners used oil lamps with a wick, or candles. In an oil lamp the mining law required the use of a high grade oil, which cost the miners from 28 to 40 cents a gallon, and a gallon lasted for a week. The Baldwin acetylene lamp resulted in quite a saving to miners for it could be used for a week at a cost not to exceed 8 cents. The oil lamps too gave off a great deal of smoke which contributed largely to miners' asthma and also consumed a great deal of the oxygen of the air. The Baldwin lamp gave off no smoke and only consumed one-eighth of the oxygen that the oil lamps consumed. Then too the oil lamps had a very large wick, an inch in diameter and rough on the top and in going through windy places with them sparks were often blown off into the timber which was oil soaked and therefore dangerous. And miners were sometimes careless and would throw partly consumed wicks away without putting their foot on them to extinguish them. In preparing powder to blast with the miners often would keep the lamps on their hats, although the law prohibited their doing so, and sometimes a spark would fall on the powder and ignite it. It was not an uncommon occurrence for miners to be injured in this way. So that the invention of the plaintiffs' acetylene lamp involved a considerable saving of money to the miners as well as an improvement in their health through better air and gave them protection against explosions and the dangers arising from conflagrations within the mines. It is not surprising therefore to find that over one million of the acetylene lamps of the patent have been sold in the market in the short time that has elapsed since the patent was granted. The Baldwin lamp had merit in it and the inventor accomplished something that was well worth while."

EFFICIENCY OF ACETYLENE LAMPS DEPENDS ON THE WATER CONTROL.

The proper production of acetylene gas in acetylene lamps depends upon a properly regulated water supply.*

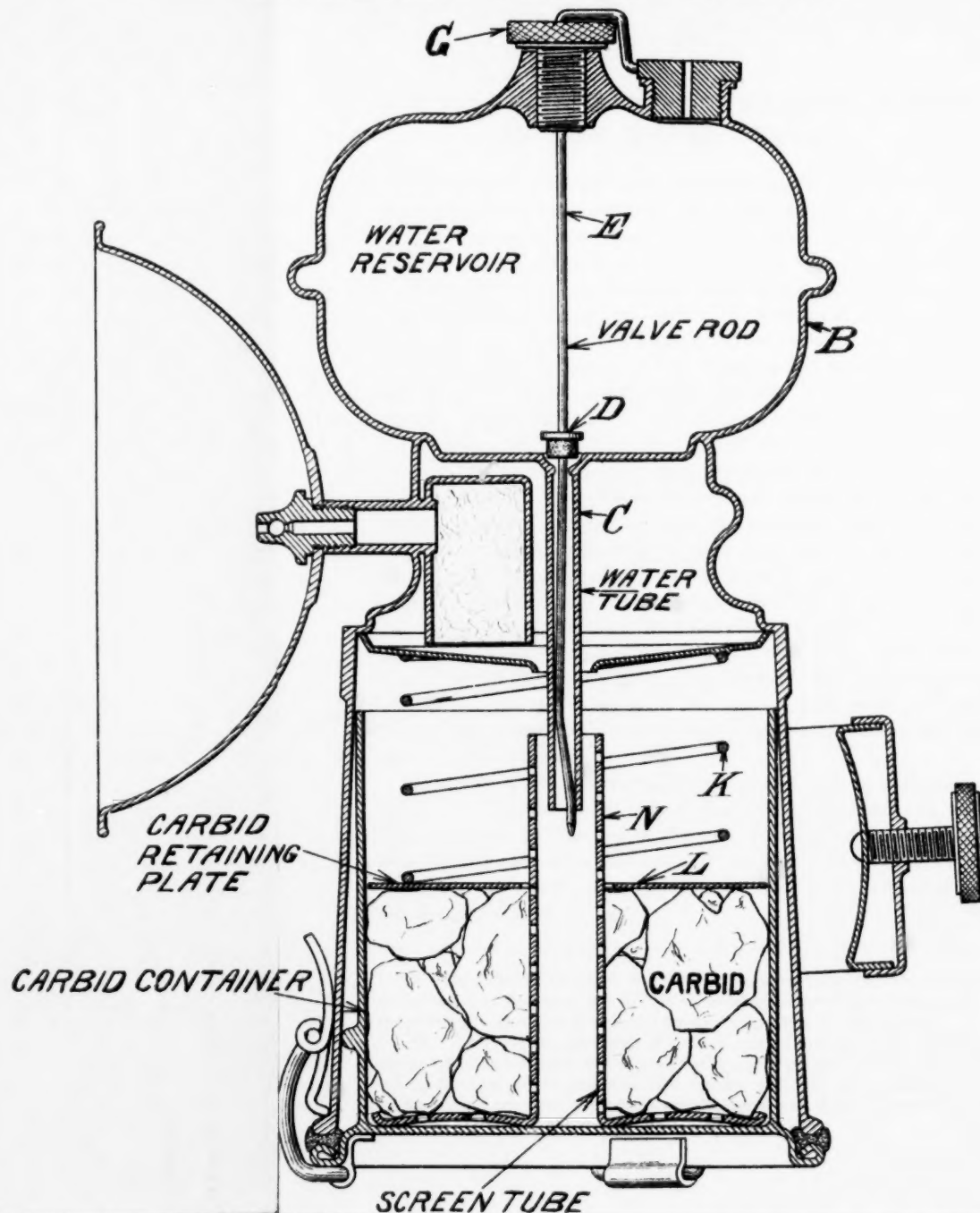
The successful operation of a small miner's cap lamp depends upon supplying a small quantity of water *continuously at the proper rate*. Such lamps have practically no storage capacity, and, therefore, gas must be generated at substantially the rate of burner consumption as variations in production will affect the flame. If the water is fed too fast, the gas will be generated so rapidly that it will blow through the burner; if the water is fed too slowly, the flame will die down; if the water feed is not uniform, the flame will be unsteady.**

In prior art lamps, the water reservoir had a drip tube for feeding water to the carbid, and in all practical lamps the water flow was controlled by a valve, although attempts were made to feed the water by devices such as wicking. In all prior lamps the water tube terminated well above the carbid reservoir and, further, a screen tube surrounded the delivery end of the water tube to prevent the swelling carbid from packing around and choking the delivery end of the water tube. Carbid swells to nearly double its normal size during hydration and, in the prior lamps, if the screen tube were not employed, the slaked carbid or sludge would reach and choke the end of the water tube.

Further, carbid gas contains particles of lime in suspension which the screen tube is not fine enough to filter out, and these deposit on the end of the tube forming an incrustation that chokes the tube and cuts off the water flow. The prior art lamps, therefore, usually had some device for cleaning off the incrustated lime.

* "The difficulty in the art has always been to regulate the flow of water to the carbid so that there will not be a greater amount of gas liberated by the chemical action than is required for use" (Op. ORR, J., Tr., p. 120).

** "The successful operation of such a lamp [miner's lamp] depends upon supplying the water continuously at the proper rate. If the water is fed too fast, gas will be generated too rapidly and will blow through the burner; if fed too slowly, the flame will die down, and if fed not uniformly the flame will be unsteady" (Op. MAYER, J., Tr., p. 98).



The prior art is well illustrated by the lamp of the prior Baldwin patent No. 656,874 (cut of Fig. 1, reproduced opposite page). This lamp, which is a bicycle lamp, and much larger than the cap lamps here involved, has a water reservoir B and a drip tube C. The flow of water into the tube is controlled by a valve D, and the rod which carries the valve extends below the outlet of the tube and bears against it, so that its rotation will scrape off incrusting lime. The water tube C terminates well above the carbide and is surrounded by a screen tube N which prevents the swelling carbide sludge, which is further confined by a spring pressed plate L, from getting to and choking the end of the tube.

The valve control of this and other prior art lamps is highly objectionable in a small lamp where the feed of water must necessarily be very slow (Tr., p. 41, re-d. Q. 77). The feeding of so little water as is required in these small lamps requires that the valve be set with great accuracy or too much water will flow between it and its seat (Tr., p. 27, Q. 4). The small orifice formed by the valve "set", even in a large lamp, is only a crack which is liable to be choked by impurities in the water. Such choking stops the flow and can only be removed by flushing, *i. e.*, opening the valve. Flushing produces an excess of gas which flows through the burner and is liable to blow out the flame, and also necessitates resetting the valve (Tr., pp. 27-30).

THE PATENTED WATER FEED AN ABSOLUTE DEPARTURE IN CONSTRUCTION AND PRINCIPLE OF OPERATION FROM PRIOR WATER FEEDS.

An essential distinction between the water feed of the patent in suit and the prior art feeds is that the water tube, instead of terminating above the carbide or being protected by a screen, is extended down, and its naked end is actually buried or imbedded in the carbide mass.*

Baldwin abandoned the construction of his earlier patent

* "The most striking characteristic of the Baldwin lamp is its departure from the prior art in that the water tube instead of terminating above the carbide or being protected by a screen, is extended down and buried in the carbide mass" (Op. MAYER, J., Tr., p. 99).

656,874, departed entirely from the practice of the art, and, instead of keeping the carbid sludge away from the outlet of the water tube, apparently invited disaster by burying the end of the tube in it. Instead of attempting to prevent the sludge from choking the end of the water tube, the prior art practice, he actually establishes conditions which would seem to make choking inevitable.

On the contrary, by burying the end of the tube in the carbid mass and using a stirrer to prevent choking, the mass of slaked carbid around the end of the tube, instead of shutting off the flow, is utilized to greatly increase the efficiency of the lamp.

As the carbid slakes it forms a sort of pasty ball of sludge (Tr., pp. 29-30, Q. 5) which packs around the end of the tube and this sludge ball acts to filter the lime particles from the gas thus preventing incrustation on the end of the tube. Further, this slaked carbid exercises a wick-like action on the water and helps to maintain regularity of flow. Again, the lumps of carbid vary in gas productiveness, certain lumps giving off more gas than others. This means, of course, that the generation of gas is necessarily more or less ununiform. In the patented lamp the slaked carbid prevents excess gas from blowing back through the water tube and raises the gas pressure in the lamp, thus affording an extra supply of gas, which compensates for ununiform gas production.

The water flows from the water reservoir through the tube L which has a bore "of comparatively large size" (Spec., p. 2, l. 18), much larger than necessary to supply the proper amount of water. *The rate of flow* is determined by a rod N of comparatively large diameter which extends through the tube into the carbid. Instead of a crack, such as results from the use of a valve, a comparatively large opening at the entrance of the water tube is provided. This comparatively large area of opening greatly reduces the liability of stoppage by impurities in the water, and if stoppage should occur, a movement of the restricting rod, which does not disturb the adjustment of the parts, overcomes it, so that resetting is unnecessary. Notwithstanding *the comparatively large opening for admitting water* to the tube, the proper amount is delivered to the carbid because *the rate of flow is slow*, due to the friction of the tube and rod on the outer and inner sides of the water column. If the same quantity of water which can enter the tube were

allowed to flow, for instance, through a slit or hole in the bottom of the water reservoir far too much water would be fed to the carbid; but the friction set up by the tube and rod on the outer and inner surfaces of the water column so retards its movement that the flow and delivery is at the proper rate.

The great increase in water area which Baldwin obtains by his comparatively large tube and restricting rod is shown by Proctor Flow Diagram, Exhibit 10, and by Illustrative Plug, Exhibit 11. More water will flow through the very small hole in this plug than flows to the carbid from the delivery end of the tube of the Baldwin lamp (Tr., p. 29).

The extension of the tube down into the carbid enables a comparatively long tube and rod to be used in a small lamp, thus increasing the friction on the water column and making it possible to use a tube of larger bore.

The stirrer is very important because it obviates the disastrous choking seemingly invited by burying the end of the water tube in the carbid mass. By making the water restricting and controlling rod movable, and by causing its end to protrude from the water tube, there is produced what the patent in suit defines as

"a device in the nature of a stirrer, which on proper manipulation may be used to break up the mass of carbid surrounding the outlet of the water duct" (Pat., p. 2, l. 57, *et seq.*, Tr., p. 115).

After the lamp has run for a time the sludge, or hydrated carbid packs around the end of the water tube, and, if not disturbed,

"prevents the proper percolation of the water to the unslaked carbid in the receptacle G" (Pat., p. 2, l. 62 *et seq.*, Tr., p. 115).

The stirrer, as the patent thus clearly points out, so disturbs and breaks up this sludge at the end of the tube that the normal water flow is resumed.*

* "The stirrer is also an important feature because it obviates the choking apparently invited by burying the end of the water tube in the carbid mass. By making the water restricting and controlling rod movable, and by having its end protrude from the end of the water tube, a device is produced which properly manipulated may be used to break up the mass of carbid surrounding the outlet of the water duct. After the lamp has been running for a time the sludge which forms as the carbid is hydrated packs around the end of the water tube and prevents 'the proper percolation of the water to the unslaked carbid' in the carbid receptacle. The stirrer so disturbs the sludge at the end of the tube, that the normal water flow is resumed" (Tr., Op. MAYER, J., p. 99-100).

The lamp set forth in the Baldwin patent, therefore, embodies the following features in combination :

(a) A long water tube having its end embedded in the carbid ;

(b) A rod which restricts and controls the flow of water through the tube ;

(c) A stirrer formed by the end of the rod which prevents the carbid sludge from choking the delivery end of the water tube.

This combination of features obtains surprising advantages as compared with the prior art lamps :

1. The long water tube and restricting rod afford retarding friction for the water column. This enables the water flow opening from the reservoir into the tube to be comparatively large, thus preventing the entrance of the tube from being choked by impurities.

2. As the water tube is carried down into the carbid a long tube of large bore can be used in a small lamp, it being obvious that the longer the tube and restricting rod the greater the friction and, therefore, the greater the bore of the tube and consequent water flow area.

3. A high gas pressure can be obtained in a small lamp. This is due to the wick-like action of the sludge in drawing the water out of the tube and also to the retarding effect of the sludge which prevents the gas from backing up through the water tube except at very high pressures.

4. The lamp is insensitive to sudden gas pressure variations. When the pressure suddenly rises, as, when the water reaches a particularly active piece of carbid, the sludge keeps the excess gas from backing up the water tube.

5. Escape of gas into the atmosphere through the water tube and reservoir is prevented except at high pressures, the sludge acting to choke back the flow of gas through the water tube and reservoir.

6. The lamp is insensitive to variations in the effective water head. The flow of water will be sufficient throughout the operation of the lamp, notwithstanding the head of water is constantly decreasing due to the fall of the level of the water in the reservoir.

7. The water is prevented from being shaken out of the tube if the lamp receives a sudden shock or jar. This is important in a miner's cap lamp.

8. The carbid sludge filters out and prevents incrustation on the tube of lime in suspension in the gas.

9. The stirrer renders possible the advantages due to the embedding by preventing the sludge from choking the delivery end of the tube.

10. Valve control is unnecessary. The rod and tube provide effective water regulation, so that the necessity for a valve with its accurate setting and the liability of choking by impurities in the water is obviated.

11. The screen tube, sludge confining plate and spring are not used and the lamp is cheaper to manufacture.

These advantages are testified to at length by plaintiffs' expert (Tr., pp. 27-33, Qs. 4-9) and are not denied.

DEFENDANTS HAVE COPIED ALL ESSENTIAL FEATURES OF PLAINTIFFS' LAMP.

The water tube of the Justrite lamp has precisely the same bore as that of the Baldwin lamp and is of the same length; the restricting rod is of precisely the same diameter, and the stirrer is formed in the same way by extending the rod beyond the tube. The function of these parts is, of course, identical in the two lamps (Tr., p. 33, Q. 10).

The shut off valve*, that is, the valve for shutting off the water to stop the generation of gas when the lamp is not in use, of course, cannot differentiate this lamp from the Baldwin lamp. A shut-off valve is shown and described in the patent in suit, and many of plaintiffs' commercial lamps were provided with such a valve (Tr., pp. 96-7, Qs. 16-20).

The identity of the water feed construction of defendants' and plaintiffs' lamp is not denied by defendants' expert.

* This valve "is a mere addendum not playing any part in the action of the device nor the combination which constitutes the invention" (MAYER, J., Op., Tr., p. 103).

**THE PRIOR ART DOES NOT ANTICIPATE OR
LIMIT THE INVENTION OF THE PATENT.**

Claim 4, the claim in controversy, is :

" 4. In a lamp of the kind described, the combination with a water reservoir, and a receptacle for calcium carbid, of a water-tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water tube, and constituting a stirrer to break up slaked carbid around the outlet of the water tube, the rod operating to restrict and thus control the flow of water to the carbid, as set forth."

This claim covers the combination of the water reservoir and carbid receptacle with the following elements :

(a) A water tube extending from the water reservoir into the carbid receptacle and embedded in the mass of the carbid therein.

(b) A rod extending through the water tube and operating to restrict and thus control the flow of water to the carbid ; and

(c) Said rod constituting a stirrer to break up the slaked carbid around the outlet of the water tube.

This combination is not found in any patent or combination of patents in the prior art, nor does the prior art exhibit any construction which has the same principle of operation.

HANDSHY PATENT No. 591,132.

An impracticable structure never heard of commercially. The lamp illustrated and two modifications described are shown in the cut opposite page 14.

The water reservoir consists of a rubber bag, it not being apparent what keeps it in the shape shown, *i. e.*, why the bottom does not sag under the weight of the water. The bottom of this bag, called "a rubber diaphragm F," has a water pipe H secured to it and is provided with a valve seat *f*. This seat co-operates with a stationary valve G carried on a rod G' fixed to the bottom of the carbid reservoir. The theory is that excess gas pressure in the chamber C will

lift the diaphragm, force the valve seat against the valve, shut off the water and stop gas generation.

Now the weight of water to be lifted is constantly decreasing. If there be six ounces of water in the lamp when it starts the excess pressure must be sufficient to lift this six ounces to close the valve. When, however, two-thirds of the water is gone, the gas pressure will only have to lift two ounces. The constantly decreasing weight of water to be lifted and constantly decreasing gas pressure in the chamber means that the lamp could never be uniform in its operation. Much more water would be fed and much more gas generated when the water receptacle is full than when half full or nearly empty. Of course, in carbid lamps a fairly definite gas pressure is necessary to properly supply the burner. If the pressure in the chamber C, necessary to properly supply the burner, is that which will lift six ounces of water, the burner will not be properly supplied when there is only sufficient pressure to lift two ounces. Conversely, if the burner is properly supplied with gas when the pressure in the chamber is sufficient to lift two ounces of water, the gas will blow through the burner when the pressure is sufficient to lift six ounces.

Petitioners claim that the rod, G^1 , which carries the valve, restricts and controls the water flowing through the pipe H. The specification admittedly does not describe any such operation (Tr., p. 63, x-Q. 23) and the patent makes it clear that no such operation takes place, because it sets forth an equivalent construction (Spec., p. 1, line 84 *et seq.*) in which this rod G^1 , instead of passing through the pipe H and being fixed to the bottom of the carbid reservoir, is described as being fixed to the top plate of the water reservoir, in which case, of course, it would not extend into the pipe H at all. For illustration of this modification see Ex. 17 (Tr., p. 228), reproduced as fig. 2 of the cut. It is clear that the rod G^1 has no water controlling function, the operation being the same whether the rod does or does not extend into the water pipe H.

Further, the rod G^1 is entirely too small with respect to the bore of the pipe H to exercise any water restricting and controlling function (Tr., p. 81, Q. 111). Theoretically this small

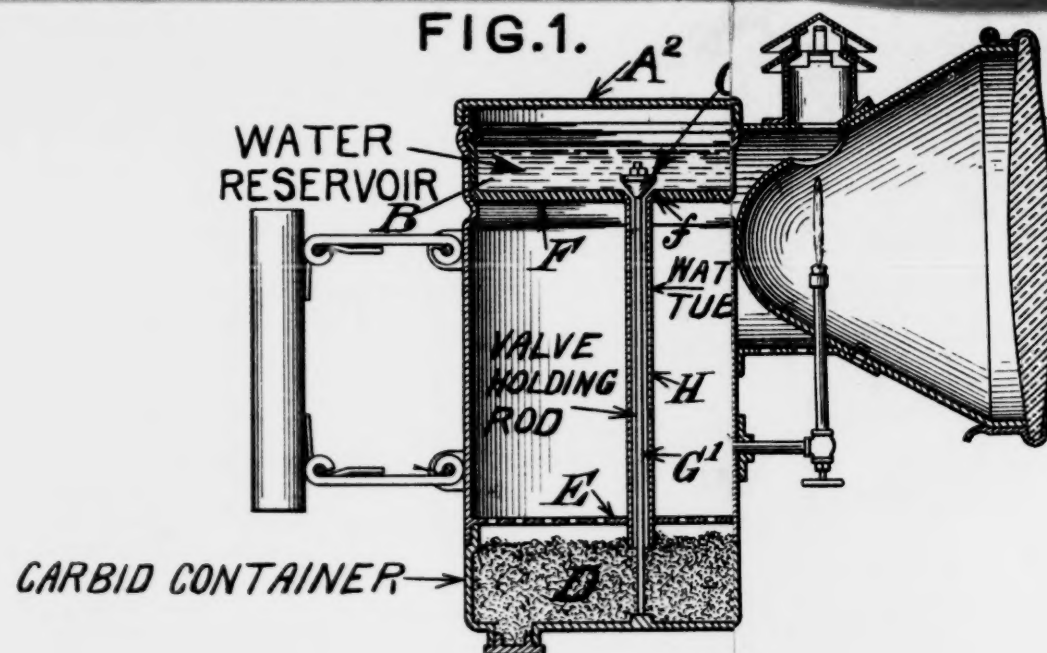
rod will have some restricting effect just as a knitting needle in a water main would have a theoretical restricting effect, but the restriction is too small to affect the operation. As the rod is fixed it cannot, of course, operate as a stirrer.

Petitioners claim that this Handsby patent shows a water tube embedded in the carbid. As there is no stirrer, this is not material, but it cannot be the case. There is no such description in the patent, petitioners' argument being based solely on the showing in the drawings. If the showing in the drawing is taken to represent the carbid it is apparent that long before the water is exhausted the increase in sludge volume due to swelling would burst the diaphragm E and ruin the lamp. But before this occurred the sludge would pack around the end of the tube and hold it down so firmly as to prevent it from being lifted by the diaphragm (Tr., p. 80, Q. 109). The action of the rubber diaphragm, on which the operation of the lamp depends, is not possible if the end of the tube H is embedded in the carbid.

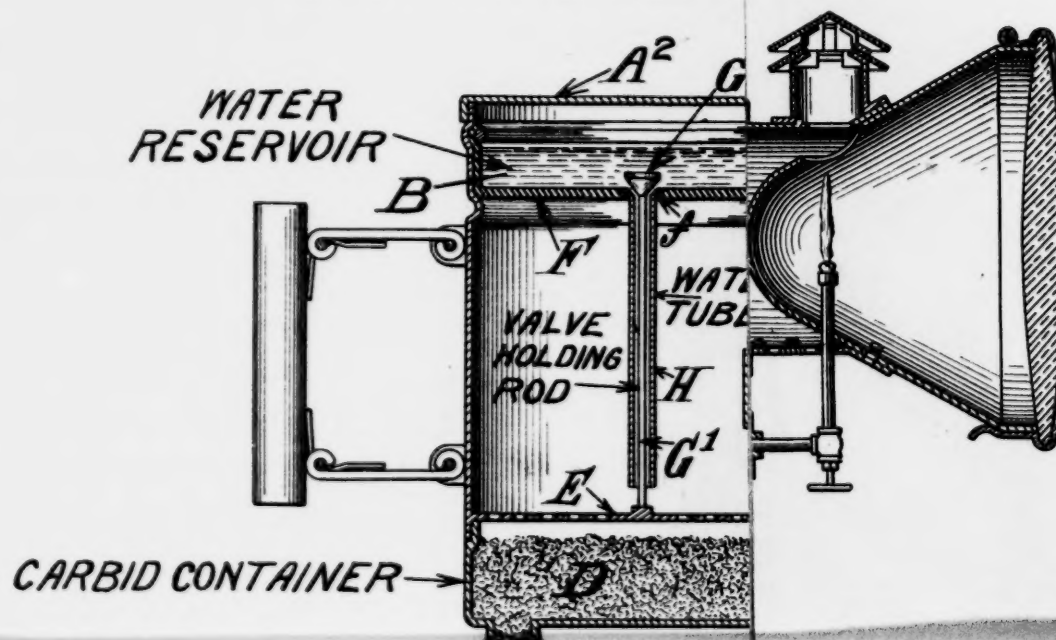
Further, the specification describes another equivalent construction in which the rod G¹ is fixed to the diaphragm E, in which case, of course, the tube H would not extend into the carbid chamber. For illustration of this modification see Ex. 16, Tr., p. 227, reproduced as fig. 3 in the cut.

It is clear that the impracticable construction of this Handsby patent does not have the mode of operation of the lamp of the patent in suit nor does it disclose any of the material elements of the claim in suit.*

* "The appellants also rely on the Handsby patent No. 591,132. In that patent it is claimed that the rod which extends through the water tube was intended to control the flow of water. There is nothing however in the specification that indicates that the rod had any such function, and counsel cannot seriously claim that the rod in question restricted to any useful degree the flow of the water. The experts on both sides practically agreed that the rod in the Handsby patent was without effect in restricting and controlling the water flow because it was too small. It is equally evident that the rod could not operate as a stirrer. The water tube could not be embedded in the carbid for the reason that if it were, as the carbid slaked and the sludge formed, the expanding sludge would prevent the reciprocating movement of the tube on which the operation of the lamp depended" (Op., C. C. A., 2nd Cir., Tr., p. 164).



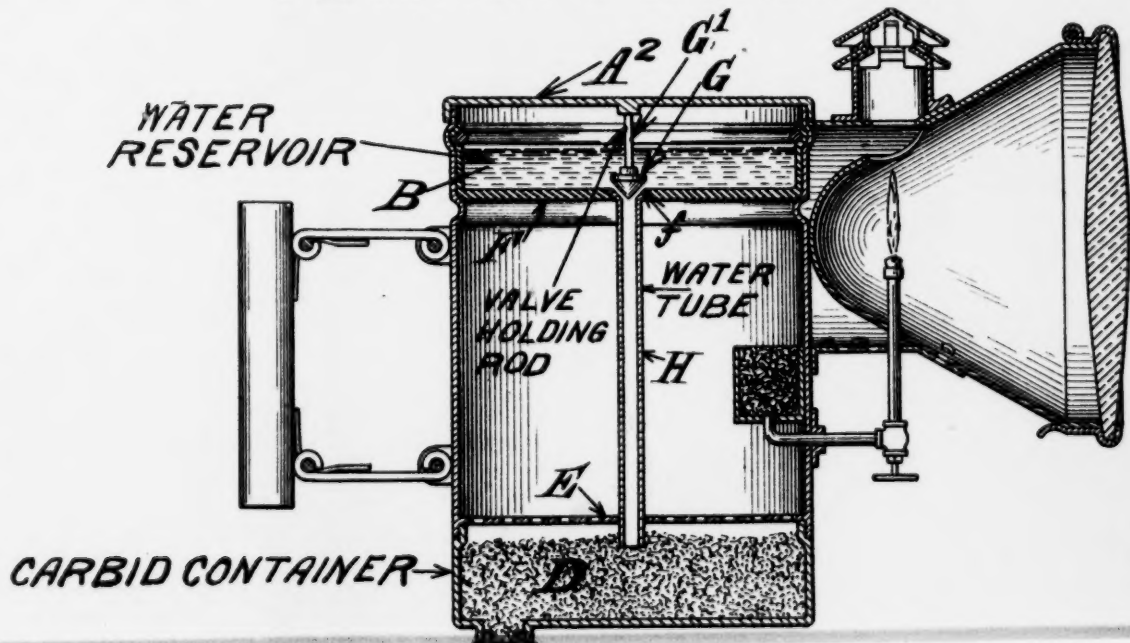
PLAINTIFFS' EXHIBIT 16.



HANDSHY PAT. 591,132.

Modifications described. Illustrated in Plaintiffs' Exhibits 16, 17.
"This stem (G^1) may be secured to the diaphragm E, or it may extend upward from the valve and be secured to the top A^2 of the chamber B." (Spec. p. 1, 1. 84)

PLAINTIFFS' EXHIBIT 17.



SCHMITT BRITISH PAT. 15688 OF 1898.

FIG.1.

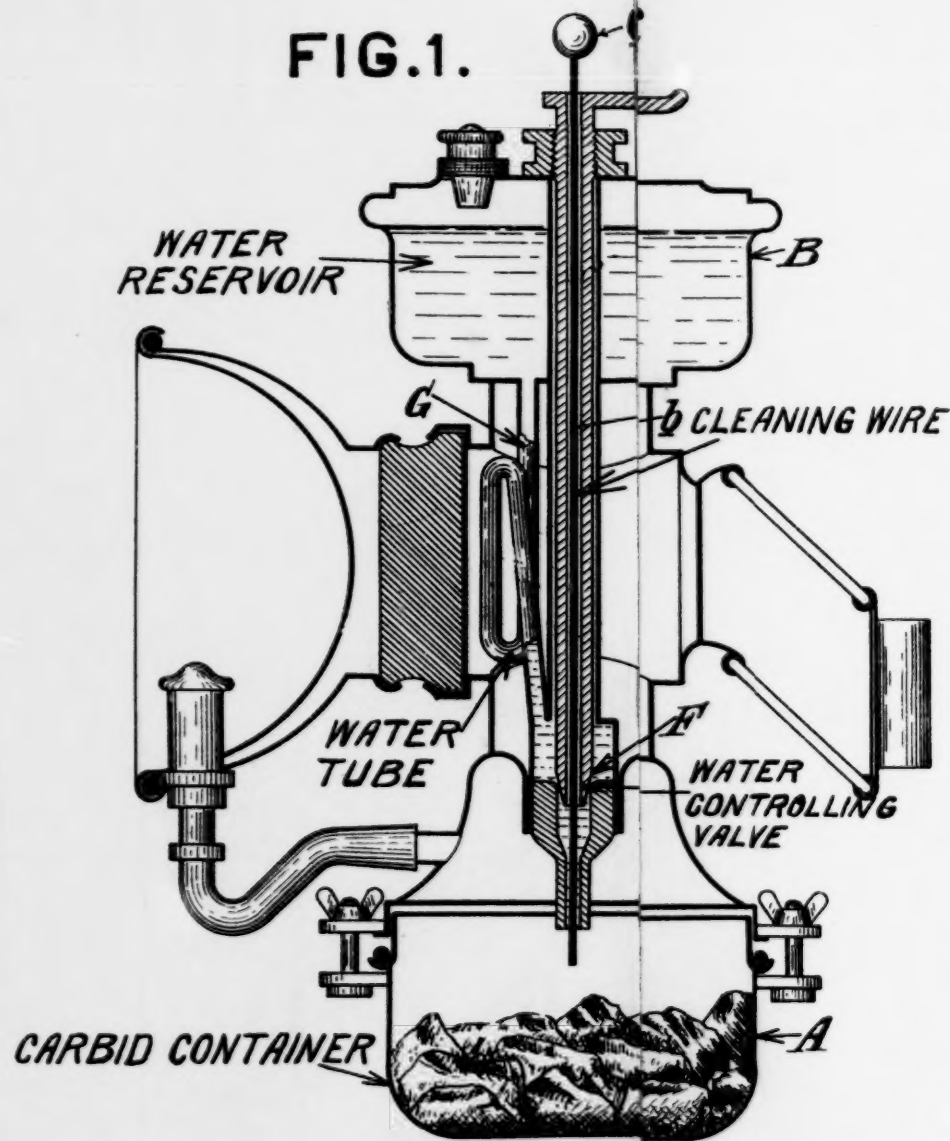
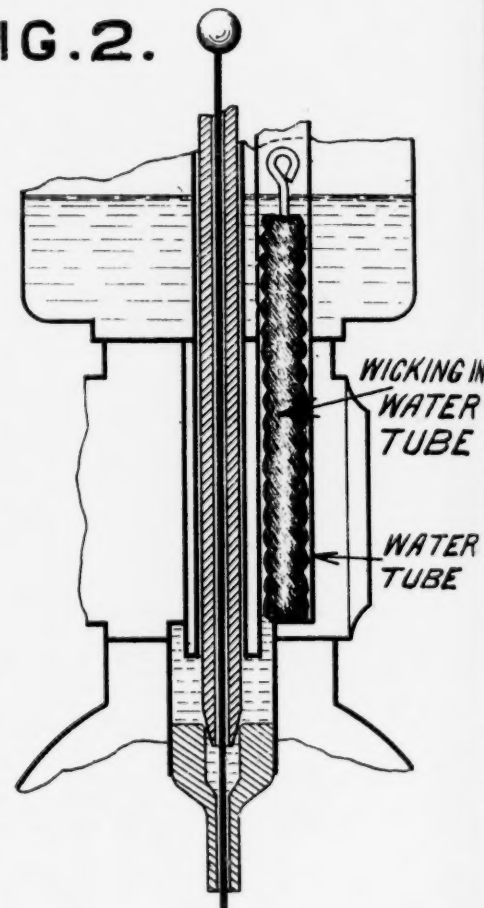


FIG.2.



15

SCHMITT BRITISH PATENT No. 15688 of 1898.

This patent (drawing reproduced opp. page) shows a bicycle lamp. The water tube stops far above the level of the carbid in the container and the water feed is controlled entirely by a valve F which has its seat near the outlet of the water tube. The patent states that—

"The spindle *a* of the valve F has an axial hole through which passes a wire or needle *b*, which extends into the carbid holder A, and has at its upper end a button head *c* by means of which it can be moved up and down from outside the lamp in order to clear the outlet opening *g* of the water supply pipe below the valve of lime or other obstruction." (Spec., p. 1, line 14, *et seq.*, italics our.)

Petitioners claim that this needle *b* is a water controlling rod. The specification does not attribute any water restricting or controlling function of the needle, but does state (*see quotation, supra*), that it is a cleaning rod. The lime referred to is the lime which the gas carries in suspension.

Petitioners also claim that the end of the water tube of this Schmitt lamp might be embedded in the carbid. There is no basis for this claim in either the illustration or specification. On the contrary, the patent makes it clear that this cannot be the case. It states that "when the pressure of gas is higher than that of the column of water", the gas will blow off through the water pipe (Spec., p. 1, l. 28). If the end of the water tube were embedded in the carbid, the gas could not blow off *at the pressure of the water column*, but the operation would be that of the lamps involved in the suit, *i. e.*, the slaked carbid around the end of the water tube would cause a much higher pressure than that of the water column to be maintained in the lamp (Tr., pp. 77-8, Qs. 90-3).

Further, the statement in the patent that the wire is used to clear the end of the tube from the lime deposit shows that it is not embedded. There is no lime deposit on the end of the water tube which is embedded in the carbid, because the carbid sludge acts as a filter (Tr., pp. 77-78, Q. 90).

Defendants' Exhibit F, Hansen Model of Schmitt Lamp, introduced to show the construction of the lamp of this patent, is inaccurate and untrustworthy, the dimensions having been

deliberately distorted. For inaccuracies of this model see Tr. 75, Q. 82.*

DINGLER'S JOURNAL ARTICLE SCHMITT LAMP.

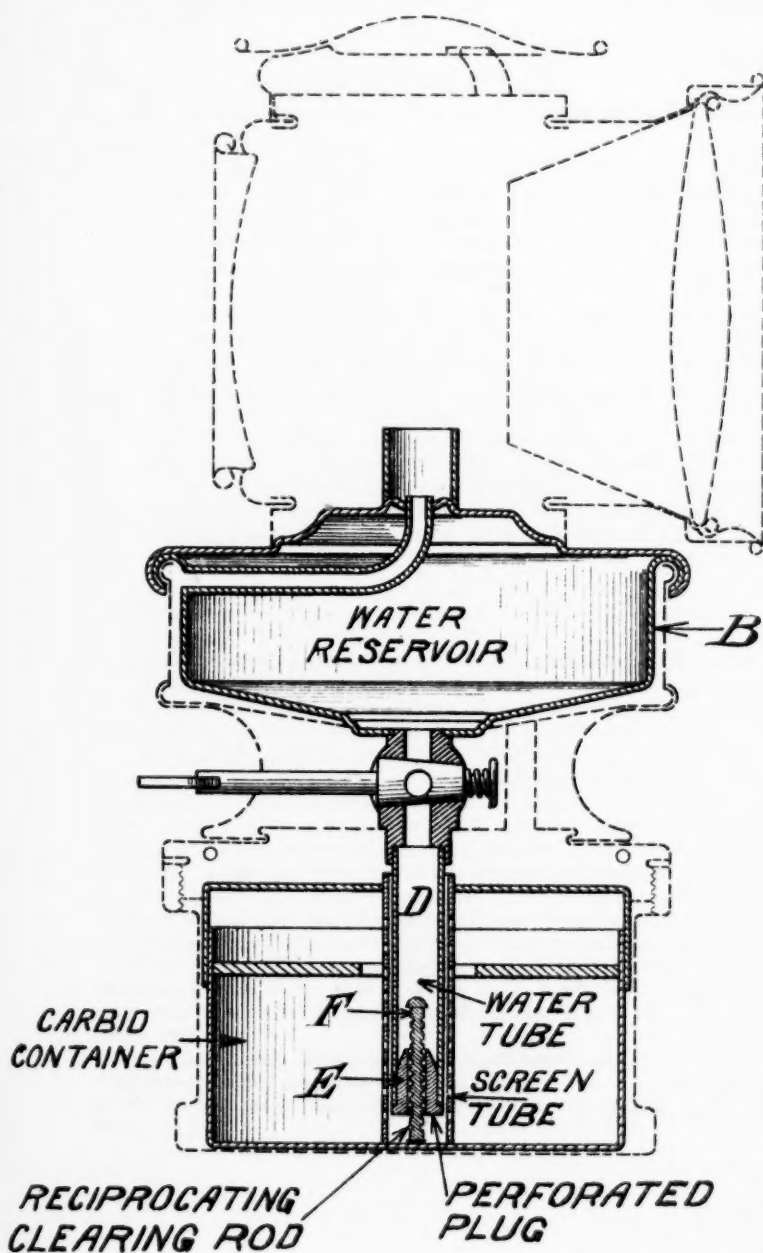
This article is disposed of by the Court of Appeals of the Second Circuit as follows :

" It is sought to help out the Schmitt patent by an article taken from Dingler's Polytechnisches Journal. But surely if the disclosure of the Schmitt patent is insufficient, as we have found it is, it cannot be helped out by the publication referred to. It does not however aid appellant's case. The sieve tube, which it shows, makes it clear that in the lamp which it discloses the end of the water tube is not embedded in the carbid. In describing the filling of the lamp, the article states that 'care should be taken during the filling operation not to let any carbid fall into the center straining tube.' We think this sieve tube makes it clear that in the lamp of the Dingler publication the end of the water tube is not embedded in the carbid and not being so embedded it could not have been intended that it should be a stirrer " (Op. C. C. A., 2nd Cir., Tr., p. 162).

* * * The appellants strongly rely on the Schmitt British patent No. 15,688, dated July 18, 1898. They assert that in it is to be found the most complete anticipation of the patent in suit and they see in it a complete and accurate embodiment of all that is called for in claim four of the reissue patent. It is true that in the Schmitt patent there is a water reservoir and a water tube. But there is no disclosure of the tube being embedded in the carbid, nor is there a disclosure of a restricting rod or a stirrer such as is disclosed in the patent in suit. It is true there is a rod extending through the water tube and that it is movable vertically within the tube. But it is described as a cleaning rod and that clearly was its sole purpose, notwithstanding the fact that the expert of the appellants argued that it was a restricting rod. The expert on the other side squarely denied that this rod had any such functions and we coincide in that opinion. The water feed in the Schmitt patent is not controlled by the rod but is controlled in part by the valve and in part by the use of a wick in the tube, a device which is referred to in Baldwin's patent as prior art which had proved unsatisfactory " (Op. C. C. A., 2nd Cir., Tr., p. 162).

" In the Schmitt British patent no disclosure is made of the tube embedded in the carbid nor is there shown a restricting rod or a stirrer such as in the Baldwin patent and commercial structure (Op. *MAYER, J.*, Tr., p. 100).

MOSHER PAT. 644,439.



The actual commercial structure of this Schmitt lamp is shown in Ex. No. 15 Schmitt Type Lamp (Tr., pp. 75-77, Qs. 84-88)*.

MOSHER PATENT No. 644,439.

The water tube D of this patent (drawing reproduced, opp. page) is surrounded by the old prior art screen tube to prevent the carbid from coming in contact with the tube so that it cannot be embedded in the carbid. As the end of the tube is not embedded in the carbid there can be no stirrer. The bottom of the tube is provided with a plug H having an opening through it and in which is located a loose valve G. This, the patent states, is capable of longitudinal play and is to dislodge any particles of dirt which may find their way into the discharge orifice (Spec., p. 1, l. 95 *et seq.*). The dirt referred to is of course not carbid sludge but sediment which the water may contain.

This patent is fully discussed, Tr., p. 81, Q. 113.**

GASTON PATENT 668,288,

HALLOWS & TUCKER PATENT 644,910.

Petitioners' brief refers to these patents, but they were not considered of sufficient importance to refer to either before the District Court or on the appeal, and they are not seriously urged before this Court.

The Gaston patent discloses a gasometer plant. The bottom of the carbid receptacle is provided with a grate for shaking out the refuse carbid. This grate is operated by a rod which extends up through the water tube and is provided with a handle 40. The patent does not attribute any water restricting and controlling function to this rod and it does not have

* Curiously, Mr. Procter came into possession of a bicycle lamp (Exhibit 15) of whose authenticity I am entirely satisfied, which seems to embody the Schmitt invention. One need not examine this physical structure to realize the greater simplicity and efficiency of the Baldwin device and to conclude that Baldwin accomplished a highly meritorious result" (Op. MAYER, J., Tr., p. 100).

** The Court of Appeals of the Second Circuit refused to consider this patent because it was not embodied in the record (Tr., p. 162).

The District Court considered it unworthy of notice (Tr., p. 100).

any (Tr., pp. 85-86, Q. 123). There is certainly no analogy between this gasometer plant, intended to furnish gas for buildings, and the invention of the Baldwin patent.

The Hallows & Tucker patent shows a lamp of an entirely different sort, the carbid being located in a receptacle inside a water jacket. The water rises through the pipe O into the carbid receptacle, the flow being controlled by a valve K operated by rod H. This rod is not described as a water restricting rod and is too small with respect to the bore of the pipe to so act. Further, there is no stirrer. This patent is fully discussed by plaintiffs' expert (Tr., p. 86, Q. 126).

The confidence which the inventors had in the acetylene construction of this lamp is indicated by the fact that they thought it necessary to embody an oil lamp in the construction.

PRIOR ART SUMMARIZED.

This analysis of the patents of the prior art shows that they do not disclose

a. A water tube extending down from the water receptacle into the carbid receptacle and having its end buried or embedded in the carbid ;

b. A rod or wire extending through and having its end protruding beyond the tube, the wire being capable of movement so that its protruding end will break up the carbid sludge which packs around the end of the tube, thus preventing packed sludge from cutting off the water flow ; and

c. The rod being of such size with respect to the bore of the tube that it restricts and controls the water flow.

The combination of elements above set forth was novel and the very valuable functions which have been set forth in this brief (pp. 10, 11) result from its use. It is this combination of features which enabled Baldwin and his licensee, pioneers in a new field, to sell a million or more of these lamps, and it is because petitioners copied these features exactly that they have been able to sell their lamps.

THE ORIGINAL PATENT WAS NOT LIMITED TO A STIRRER HAVING A BENT END.

The clear novelty of the Baldwin invention, and the very large sales of the lamps embodying it, establishes that the patent, if not a pioneer in the full sense, falls well within the class of inventions designated by this Court in *Hobbs v. Beach*, 180 U. S., 383, as "a pioneer within its limited field," and that the patentee, as there stated

"is still entitled to the benefit of the doctrine of equivalents and that it is still true as observed in *Morley Sewing Machine Co. v. Lancaster*, 129 U. S., 263, 273, 32 L. Ed., 715, 719, 9 Sup. Ct. Rep., 299, 302. 'Where an invention is one of a primary character, and the mechanical functions performed by the machine are, as a whole, entirely new, all subsequent machines which employ substantially the same means to accomplish the same result are infringements,' although the subsequent machine may contain improvements in the separate mechanism which go to make up the machine."

Again, as stated by this Court in *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U. S., 413:

"It is manifest, therefore, that it was not meant to decide that only pioneer patents are entitled to invoke the doctrine of equivalents, but that it was decided that the range of equivalents depends upon and varies with the degree of invention."

Now, it is not disputed in this case that the function performed by the stirrer is identical whether its end be bent or straight.

The District Court, before which experiments were performed to demonstrate this fact (Tr., p. 37, x-Qs. 43, 44) found that

"But the testimony is convincing that the straight stirrer and the bent stirrer function exactly the same. One is suitable for a small area of carbid and the other for a large area. They both stir and I confess myself unable to see how a stirrer is not a stirrer" (Op. *MAYER, J.*, Tr., p. 102).

This Court has again and again affirmed the proposition that elements or features of construction which discharge the same function are the same even though they differ in name,

form or shape. Thus, in *Union Paper Bag Co. v. Murphy*, 97 U. S., 120 :

"Except where form is of the essence of the invention, it has but little weight in the decision of such an issue, the correct rule being that, in determining the question of infringement, the court or jury, as the case may be, are not to judge about similarities or differences by the names of things, but are to look at the machines or their several devices or elements in the light of what they do, or what office or function they perform, and how they perform it, and to find that one thing is substantially the same as another, if it performs substantially the same function in substantially the same way to obtain the same results; always bearing in mind that devices in a patented machine are different in the sense of the patent law when they perform different functions or in a different way, or produce a substantially different result."

And, later, in the same decision :

"Authorities concur that the substantial equivalent of a thing, in the sense of the Patent Law, is the same as the thing itself; so that if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form or shape. *Curt. Pat.*, 4th Ed., Sec. 310."

Petitioners contend that because the drawing shows a stirrer having a bent end, the patent must be limited to that construction, excluding all equivalents which perform the same function. This Court has repeatedly affirmed the contrary of this proposition. Thus in *Winans v. Denmead*, 15 How, 330, which this Court in *West. Elect. Co. v. La Rue*, 139 U. S., 601, said stated "the settled doctrine of this Court," the drawings of the patent disclosed a coal car in the form of a frustum of a cone. No other form was described and the claim even was limited to the cone shaped body. Defendant's car was octagonal in shape. This Court in holding defendant's car an infringement, said :

"It is generally true, when a patentee describes a machine and then claims it as described, that he is understood to intend to claim, and does by law actually cover, not only the precise forms he has described, but all other forms which embody his invention; it being a familiar rule, that to copy the principle or mode of operation described, is an infringement, although such

copy should be totally unlike the original in form or proportion."

And the Court further said :

" Now, while it is undoubtedly true that the patentee may so restrict his claim as to cover less than what he invented, or may limit it to one particular form of machine, excluding all other forms, though they also embody his invention, yet such an interpretation should not be put upon his claim if it can fairly be construed otherwise, and this for two reasons :

" 1. Because the reasonable presumption is, that, having a just right to cover and protect his whole invention, he intended to do so (*Haworth v. Hardcastle*, Web. P. C., 484.

" 2. Because specifications are to be construed liberally, in accordance with the design of the Constitution and patent laws of the United States, to promote the progress of the useful arts, and allow inventors to retain to their own use, not anything which is matter of common right, but what they themselves have created."

See also

Cantrell v. Wallick, 117 U. S., 689.

Hoyt v. Horne, 145 U. S., 302.

It is submitted that the Court of Appeals of the Second Circuit correctly said that

" It does not follow that because the original patent shows a stirrer having a bent end it is limited to such a stirrer notwithstanding that the patent defines the function the stirrer is to discharge, and notwithstanding that in the lamps in suit a stirrer having a straight end discharges precisely that function " (*Op.*, Tr., p. 160).

Further, the specification of the original patent shows that the patentee did not intend to limit himself to a stirrer having a bent end. After setting forth the prior art and describing the improved water feed, the specification points out that the slaked carbid by caking around the end of the water tube, will prevent proper percolation of the water to the carbid and states that to prevent this there maybe employed :

" a device *in the nature of a stirrer*, which on proper manipulation may be used to break up the mass of carbid surrounding the outlet of the water duct and which by having become slaked and caked by the action of water prevents the proper percolation of the latter to

the unslaked carbid in the receptacle G, Fig. 1" (Orig. pat., p. 2, line 50 *et seq.*; Tr., p. 152; italics ours).

Although the term stirrer in itself is sufficiently broad to cover anything which will disturb the carbid,* the patentee broadens it by saying that the device to be used is "in the nature of a stirrer". And he then goes on to define what he means, that is, a device which can be manipulated to break up the mass of carbid surrounding the outlet of the water tube, to permit proper percolation of water to the unslaked carbid.

Having thus broadly stated the function to be performed, and having made it clear that the device to be employed is a device which will perform that function and which having the general nature or properties of a stirrer, the patentee proceeds to describe the *specific form* of stirrer he then thought preferable, saying:

"As such device I employ a stem or rod N, which extends down through the tube L and is bent at substantially right angles to form an arm N'" (Orig. Pat., p. 2, lines 57 *et seq.*; Tr., p. 152; italics ours).

Here again, by beginning this statement with the words "as such device," the patentee guards against the interpretation that the rod N having the bent arm N' is the only form of his stirrer. These words can only mean that the device afterwards specifically described is only one form of the device which may be employed; if they do not mean this, they mean nothing in the sentence.

Again, the claims of the original patent were carefully drawn to exclude the interpretation that the stirrer referred to in each of them was a stirrer formed by a rod having a bent end. We quote the definition of the stirrer in the claims of the original patent:

In claim 1 of the original patent, the stirrer is defined as
"a rod or stem * * * having its end formed as a stirrer to break up the slaked carbid."

In claim 3, the stirrer is defined as

"a stirrer passing through each tube to break up the slaked carbid around the end of the tube."

* The term "stir" is defined in the New Standard Dictionary as meaning "to alter the original position of the particles or components of"; "to change the place or position of; cause to move; disturb."

In claim 4, the stirrer is defined as

"a rod * * * constituting a stirrer to break up slaked carbid."

In claim 2, the stirrer is defined as

"a rod * * * having its end bent to form a stirrer for breaking up the slaked carbid."

In claim 2 only was the stirrer defined as having a bent end, the other claims calling for a stirrer broadly. Claim 4, for instance, called for a rod, "constituting a stirrer" to break up the slaked carbid.* This differentiation in the terms employed in the claims shows that it was not the intention of the patentee to limit his invention to a stirrer having a bent end.**

The file wrapper shows that this careful selection of terms which the patentee employed in his original specification in describing and defining his stirrer was not haphazard. At the time Baldwin filed his original application he had embodied the invention in, and was marketing, a large gang lamp for mines holding about three pounds of carbid (Tr., p. 19, Qs. 31-34), twenty-four times the amount which this miner's cap lamp holds. This, of course, required a very large carbid receptacle and a correspondingly large water reservoir. Baldwin undoubtedly believed that a bent stirrer was a better form for such a lamp and, in accordance with the requirement of the statute, he illustrated and specially described what he then believed to be the best form of his invention. The file wrapper shows, however, that he knew prior to filing his application that a straight stirrer could be used and had actually used one, for he filed an affidavit in the Patent Office to carry his invention back of a certain Van Praag patent and filed a sketch of a lamp he had used containing a straight rod stirrer (See sketch, Tr. p. 257, Exhibit B, affidavit, Tr. 140).

* "Claim 4 has no limitation but speaks merely of the rod as 'constituting a stirrer,' which, especially in view of the phrasing of the other two claims, may properly be construed as covering a rod of whatever shape (straight or bent) which penetrated into the carbid sufficiently to allow of its being used to stir the same." (Op. C. C. A. 2nd Cir. Tr. p. 160).

** "If Baldwin meant to restrict himself to a bent stirrer, why the qualifying words underscored in claim 2 and not in claim 4." (Op. MAYER, J., Tr. p. 102).

The Court underscores the part calling for the "end bent to form a stirrer."

The care taken not to limit the original specification to a bent stirrer was clearly for the purpose of protecting not only what Baldwin then considered to be his preferred form, but also the form shown in the sketch and having the straight stirrer.

Finally, five months before the grant of the original patent Baldwin had made the identical lamp involved in this controversy employing the straight stirrer. It cannot be believed that either Baldwin or his solicitor would have allowed this patent to issue unless they believed the patent was broad enough to cover the straight stirrer construction.

THE STATE OF THE ART DOES NOT LIMIT THE ORIGINAL PATENT TO A BENT STIRRER.

The prior art patents either anticipate the Baldwin invention or they have no bearing, for anticipation could not be avoided by bending the end of the stirrer.

If, therefore, these prior art patents have any effect that effect could not be avoided by reading a bent stirrer into claim 4 of the original patent.

THE REISSUE DOES NOT BROADEN THE SPECIFICATION AND NARROWS CLAIM 4 AS ORIGINALLY DRAWN.

In the litigation in the Seventh Circuit, *Baldwin v. Bleser*, *supra*, the District Court held the patent valid and infringed by the Bleser lamp (construction illustrated, 199 F., 133).

In considering the opinion of the Court of Appeals, it is to be borne in mind that Judge KOHLSAAT* is principally considering the earlier Baldwin patent 656,874, included in the suit, and that the record before him was exceedingly meager. As appears from the opinion of Judge ORR, who had the entire Bleser record before him in the 3d Circuit case, Judge KOHL-

* Judge SANBORN did not sit and Judge MACK stated from the bench that this was his first patent case.

SAAT did not fully appreciate the water controlling and restricting function of the original patent 821,580. Judge KOHL-SAAT states, for instance, referring to the lamp of the earlier patent and the lamp of the original patent 821,580, that

"In both, the flow of water is regulated by the pressure of the gas generated in the calcium carbide chamber, acting upon the column of water in the tube, and by the valve arrangement" (Bleser v. Baldwin, 199 F., at p. 133).

While this statement is true of the earlier Baldwin construction it is not true of the lamp of the original patent 821,580, in which the valve has nothing to do with regulating the water flow, this being regulated not by the gas pressure but by the restricting rod in the tube.

Again, Judge KOHL-SAAT was apparently of the opinion that the Handsby patent had some bearing on claim 4, which, as originally drawn, did not, in terms, state that the rod operated to restrict and control the flow of water to the carbide. Judge KOHL-SAAT apparently construed the claim strictly and found that it did not call for a rod which was relatively large enough to restrict and control the water flow. Judge HUMPHREY, however, evidently understood the rod of claim 4 to be the rod described in the specification, that is, a rod operating to restrict and control the flow of water to the carbide, and held the patent to cover the so-called straight stirrer.

Judge KOHL-SAAT, under the impression that the water control of this patent 821,580 was regulated by the valve, and seemingly not appreciating the importance of the stirring function, and that it could be effected as well by a rod having a straight end as one having a bent end, apparently limited the original patent to a stirrer having a bent end, although he states

"The second patent in suit is for alleged improvements on the first.

"As above stated, these consist in its means for agitating the carbide, and in the location of the lower end of the water tube and protruding stem within the carbide mass. The former has some merit of a modest kind. It is new and useful, and, in our judgment, entitled to recognition as involving some inventive thought" (199 F., p. 137).

In this quotation no reference is made to the very important function of the rod in restricting and controlling the water flow.

This decision made it apparent that the original patent did not clearly and fully set forth the invention, and thus made the necessity for the reissue apparent.

**DESCRIPTIVE MATTER INSERTED IN THE
REISSUE AMPLIFIES BUT DOES NOT
BROADEN THE ORIGINAL DISCLOSURE.**

We quote in parallel columns the original description and the insertion in the reissue :

ORIG. SPEC.

" there is employed * * * a device in the nature of a stirrer * * * used to break up the mass of carbid * * * and which * * * prevents proper percolation of the latter [water] to the unslaked carbid " (Spec., p. 2, lines 48 *et seq.*).

" there is employed * * * a device in the nature of a stirrer, which on proper manipulation may be used to break up the mass of carbid surrounding the outlet of the water duct and which by having become slaked and caked by the action of water prevents the proper percolation of the latter to the unslaked carbid " (Spec., p. 2, lines 48 *et seq.*)

REISSUE.

" the function of the stirrer is to break up, pierce or disturb the particles of the slaked carbid mass which, when the lamp is in use, forms at the delivery end of the tube. This slaked carbid mass tends to solidify and either shuts the water off altogether or restricts it so that less water is delivered from the water tube than the lamp demands for efficient operation " (Spec., p. 2, lines 73 *et seq.*).

" As it is sufficient under certain circumstances, to insure the requisite water flow by so manipulating the stirrer, as to pierce, break up, or loosen the slaked carbid mass immediately around or at the mouth of the tube, it is obvious that the stirrer need not always be formed with a bent end or so as to extend radially from the mouth of the tube " (Spec., p. 2, lines 81 *et seq.*)

The first two sentences of the matter inserted in the re-issue do not broaden the original disclosure. They simply make clear why "the mass of carbid" prevents the "proper percolation of the latter [water] to the unslaked carbid." If, therefore, there is any broadening of the original specification, it must be found in the last inserted sentence.

This sentence certainly does not describe any mode of operation not within the disclosure of the original patent, nor any new construction. The original patent stated that there was employed a "device in the nature of a stirrer" *which on proper manipulation* may be used to break up the mass of carbid. The added matter simply further defines what is meant by "proper manipulation," and further defines what is meant by "a device in the nature of a stirrer." Whether this additional definition of "proper manipulation" is correct or not is purely a question of fact. If it be a fact that in these lamps the requisite water flow can be obtained by manipulating the stirrer so as to pierce, break up or loosen the carbid mass immediately around the outlet of the tube, then this statement is obviously what was meant by "proper manipulation" in the original. On this point there can be no doubt for the evidence is clear. The District Court which took the evidence and witnessed the tests found:

"But the testimony is convincing that the straight stirrer and the bent stirrer function exactly the same. One is suitable for a small area of carbid and the other for a large area. They both stir and I confess myself unable to see how a stirrer is not a stirrer" (Op. *MAYER, J., Tr.*, p. 102).

"I see nothing in the language added in the reissue to the original specification to warrant the conclusion that the patent was thereby broadened as to this point.

"The breaking up or stirring function is more fully described in words but no functional change is described" (Op. *MAYER, J., Tr.*, p. 102).

The statement referred to being a statement of fact, merely amplifying the original disclosure, it necessarily follows that the stirrer need not be formed with a bent end and saying so in the specification cannot broaden the disclosure. **The necessary conclusion from facts properly stated cannot be a broadening statement.** In fact, this Court has stated that a

reissue is not broadened by amendments which are "contained by *reasonable implication* in the original description."

"There is nothing in these additions and amendments which either was not virtually contained by reasonable implication in the original description, or, if new, amounted to more than specific and exact directions to supplement those contained in the original. The invention is not differently described, and is not described so as to be a different invention, nor is the claim enlarged" (Eames v. Andrews, 122 U. S., 40. For a digest of the facts in this case see Appendix).

The District Judges, who took the evidence and were particularly familiar with the operation of the lamps, agree as to the disclosure of the invention of the original patent. Judge HUMPHREY could not have held the Bleser lamp to be an infringement of claim 4 of the original patent without finding in the patent everything which is now in it and Judge MAYER and Judge ORR in sustaining the reissue found the original patent covered a straight stirrer. Judge MAYER states:

"On this 'bent' and 'straight' rod question, I am firmly convinced that the reissue is valid and that the claim must be construed as including a straight rod and *as so constructed is not a departure from the original patent*" (Op. MAYER, J., Tr., p. 102, italics ours).

CLAIM 4 WAS NARROWED BY THE REISSUE.

Claim 4 was amended to include the limiting statement

"the rod operating to restrict and thus control the flow of water to the carbid."

Judge KOHLSAAT, proceeding on the theory that the water flow in this lamp was controlled by the gas pressure, (See Bf., p. 25) apparently considered the rod of claim 4 as any rod and also that the Handshy patent had some bearing on this claim. This amendment prevents the claim from being interpreted to cover any kind of a rod extending through the tube and directly limits the construction claimed to a rod which restricts and controls the water flow. The claim now expresses on its face a limitation which it did not express as originally drawn and is, therefore, narrowed.*

* "It is made plain that the tube must be of such length as always to be embedded in the carbid and that the rod extending through the same must be such as to operate to restrict and control the flow of water" (Orr, Op. Tr., p. 123).

THE ORIGINAL PATENT IS DESTROYED IF LIMITED TO A BENT STIRRER.

The large gang lamp first developed, holding about three pounds of carbid, had a large carbid receptacle and a large water tube and a large restricting rod to provide the necessary water. In such a lamp, the slaked carbid or sludge forms a comparatively large ball around the end of the tube. To disturb the large sludge ball and secure proper flow, agitation through a considerable area around the mouth of the tube, though not necessary, is desirable. If a straight stirrer be used in such a lamp, the water will eventually seep through the crack opened up between the inside of the ball and the mouth of the tube by the rotation of the straight stirrer, but it will work through to the unslaked carbid faster if the sludge is disturbed through a considerable area. In the big lamps, therefore, the bent stirrer is preferable, because, after stirring, the water will get through the mass more quickly (Tr., 20 Q. 34). In a small lamp nothing is gained by a bent over a straight stirrer, because as the evidence shows the water seeps through the small carbid mass rapidly enough when it is disturbed by a straight stirrer.

To limit the invention of the original patent to a stirrer having a bent end is to lose sight entirely of the function to be accomplished and to insist that the stirrer of the form which may be desirable in a large lamp shall be embodied in a small lamp. Further such limitation allows the real invention to be appropriated and the infringer to escape, because, though he had taken *all the elements* of the invention and taken them in the form exactly adapted to his infringing lamp, he had not adopted the illustrated form of *one element*.

To so limit the original patent allows an infringer to take Baldwin's exact long water tube with its end embedded in carbid, and his exact water controlling rod, and to give the rod the exact movement described in the patent to produce the exact stirring operation described, and to escape because the end of the rod differed in form only from that shown in the patent. This is not only contrary to the rules governing the construction of patents, but it works a particular hardship in this case, because it allows the infringer to appropriate an embodiment of the invention which the patentee himself

was the first to devise and the first to place on the market, and a construction which had been devised before the patent was applied for.

The finding of the Court of Appeals of the 2d Circuit in *Hutter v. DeQ Bottle Stopper Co.*, 128 Fed., 283, applies here :

" We find nothing in the file wrapper, the specification or the prior art requiring so liberal a construction. It should be the endeavor of a court of equity to save rather than to destroy a meritorious invention ; the court should not permit a notorious infringer to escape by the use of a perfectly transparent disguise. If the defendants' contention be correct no one can infringe except some brainless automaton who insists on using an exact reproduction of Fig. 3, alike in all details of length, width and angle down to the smallest fraction of an inch. Should such a one display the slightest common sense in the construction of the parts or even in their manipulation he would avoid infringement in spite of himself."

THE REISSUE DOES NOT COVER ANY COMBINATION REJECTED BY THE PATENT OFFICE AND CANCELLED.

The Patent Office did not reject any claim of the original application which contained a stirrer.

Claims 3, 4 and 5 of the application as filed—1, 2 and 3 of both reissue and original patent—which contained the stirrer element, were allowed on the first action unchanged, except for a slight amendment to claim 3. Claims 1, 2 and 6 of the application, however, *which did not contain the stirrer, were rejected*. These claims were cancelled and claim 4 of the original patent was substituted and allowed.

Claim 6 (Tr., p. 135), referred to in petitioners' brief, was loosely drawn and indefinite in its statement of the subject matter to be covered and it did not include a stirrer. It did include the water tube and rod but the claim did not state that the rod was to form or constitute a stirrer. In fact, it did not even state that the rod was to be movable which of course it must be if it is to form a stirrer. As drawn, therefore, this claim would include a construction in which the rod was fixed and could not form a stirrer. It was accordingly

cancelled, and claim 4 which included the stirrer was substituted therefor and allowed. It is clear that these claims are not the same in scope. A claim which includes a stirrer is certainly not the same in scope as a claim which does not. Claim 6 also included a valve, an element which is not in claim 4. When the applicant inserted claim 4 he put in a claim which was narrower than the original claim 6 in that it included a stirrer and broader in that it omitted the valve.* Whether petitioners' lamp responds to canceled claim 6 or not is not material. The material and important fact is that it contains a stirrer which claim 6 did not contain and that it responds to the narrower claim which the Patent Office allowed and which, still further narrowed, is included in the reissue.

OPINION OF THE COURT OF APPEALS OF THE THIRD CIRCUIT.

This opinion is based solely on the proposition that this reissue is a broadened reissue and that a broadened reissue cannot be obtained

“after such a lapse of time as seven years and after the claims has been limited by final adjudication.”

We have shown that this reissue is not a broadened reissue. The Court of Appeals of the Third Circuit misread the claims of the original patent. After quoting from the original patent, it states,

“In the original patent, therefore, the inventor described two devices by which the generation of gas might be effected and controlled: (1) A tube with a wire or rod therein; and (2) a bent arm on the end of

* Judge MAYER, after quoting claim 6, said:

“It will be noted that this language is broad; that it does not describe in words a stirrer; that it also includes a valve which is an element not included in either Claim 4 of the original patent or Claim 4 of the reissue and which, in my opinion, is a mere addendum not playing any part in the action of the device nor the combination which constitutes the invention. * * * Had the situation ended there, the cancellation of Claim 6 might possibly have been construed as an estoppel but the significant and controlling fact in the history of this wrapper is that after Claim 6 was cancelled, Claim 4 of the

the wire or rod, which could be used as a stirrer. And he *claimed both of these devices in each of the first 4 claims*" (219 Fed., p. 737 ; italics ours).

The Court, therefore, was under the impression that each of the first four claims of the original patent was limited to a bent stirrer. This, as before pointed out, is not the fact. The only claim of the original patent, which was limited to a bent stirrer, is claim 2, the other three claims defining the stirrer broadly. (See pp. 22, 23 of this brief, where definition of the stirrer in these claims is quoted.)

The Court of Appeals of the Second Circuit disagrees with the Court of Appeals of the Third Circuit in its interpretation of the original patent. It states:

"Claim one covers 'end formed as a stirrer', which might properly call for something more than a straight end. Claim two covers 'end bent to form a stirrer'. Claim four has no limitation but speaks merely of the rod as 'constituting a stirrer', which, especially in view of the phrasing of the other two claims, may properly be construed as covering a rod of whatever shape (straight or bent) which penetrated into the carbide sufficiently to allow of its being used to stir the same. In that respect it differed from the prior art. It seems to us that the court in the Third Circuit erred in not holding that the 'rod extending through the water tube * * * as set forth' was the sort of rod to which the patentee had devoted a whole column of description dealing with prior art defects and his improvement to avoid them, that is to say a rod of thickness sufficient to regulate flow of water through the tube. It does not follow that because the original patent shows a stirrer having a bent end it is limited to such a stirrer notwithstanding that the patent defines

original patent was allowed. That claim clearly described the rod as constituting a stirrer. * * *

"The file wrapper satisfies me that the examiner originally allowed claims containing the stirrer which now constitute Claims 1, 2 and 3 of the patent and that after Claim 6 was cancelled, he allowed a claim (to wit: Claim 4) broader than Claim 6 in that it omitted the valve, and narrower than Claim 6 in that it definitely included the stirrer. * * *

"The file wrapper history in my opinion comes down to this: That in a battle for words the inventor never gave up his struggle for the invention but landed on language which later the courts construed as being too broad to be limited to a rod operating to restrict and control the flow of water to the carbide" (Tr., p. 108).

the function the stirrer is to discharge, and notwithstanding that in the lamps in suit a stirrer having a straight end discharges precisely that function" (Tr., p. 160).

The suggestion by the Court of Appeals of the Third Circuit that lapse of time is determinative is not supported by the authorities. The reissue statute places no limit of time within which proper correction of a patent may be had, and it follows, therefore, that the circumstances of each case must govern.

The circumstances under which a reissue should be granted are stated by this Court in *Powder Co. v. Powder Works*, 98 U. S., 126, which is one of the authorities referred to by the Court of Appeals of the Third Circuit. Here this Court quotes with approval, the language used in *Goodyear v. Day*, 2 Wall., 282, as follows :

" ' If the last patent differs from the first only in stating more clearly and definitely the real principles of the invention, so that those who wish to pirate it may not be allowed to escape with impunity through the imperfections of the language used in the first, there has arisen one of the cases for which is was the intention of the Act of Congress to provide, and the objection is worthless in point of law.' "

As the reissue was applied for as soon as the imperfections had been made apparent by Judge KOHLISAAT'S opinion the fact that it was not granted until seven years after the grant of the original, is not material, particularly as the patent was narrowed.

The cases referred to by the C. C. A. of the Third Circuit are digested in the Appendix.

PETITIONERS HAVE NO INTERVENING RIGHTS.

We have demonstrated that the specification of the original patent was not broadened by the reissue and that claim 4 was narrowed by the insertion of a limitation which it did not originally contain. The legal effect of this reissue is, therefore, to narrow claim 4 and the doctrine of intervening rights does not apply to a narrowed reissue.

Further, the equitable doctrine of intervening rights neces-

sarily presumes equitable rights gained by those who have developed the art independently of the patentee. Equitable rights are not gained by such conduct as that of petitioners who, five years after the market was created, attracted by the profits of the business, copied patentee's identical lamp, so far as the patented features are concerned. This state of facts does not call for the application of the doctrine of intervening rights or any other equitable doctrine. Equity should not protect those who filch from the patentee the precise construction which he has given to the public and on which he has developed his trade.

Further, there is no proof of any intervening rights.

The Justrite Co. began manufacture in the first part of 1911 and sold its first lamps in July of that year. The decree of the Circuit Court in *Baldwin v. Bleser* was entered Apr., 1911. At the time the Justrite Co. began its manufacture and sale of these lamps, therefore, the original patent was in full force, having been held valid and infringed. The decision of the Court of Appeals of the 7th Circuit was not handed down until April 23, 1912. The manufacture and sale by the Justrite Co. was, therefore, begun and carried on in open defiance of the original patent, which had been judicially declared valid and infringed by the lamp the Justrite Co. put out. Such manufacture cannot constitute intervening rights.

"The surrender of a patent for reissue is an admission on the part of the surrenderers that the original patent is defective, and the acceptance of the surrender by the Commissioner is a judgment that its amendment by reissue is required; but neither the surrender nor its acceptance indicates that the surrendered patent was entirely void. *The surrender is a voluntary extinguishment of former rights, not a concession that such rights never existed, and, therefore, while no suit can be maintained under the original patent nor any infringement of its privileges be made the ground of a recovery, all closed transactions under it remain undisturbed. Judgments obtained upon it are not vacated. Moneys paid under it cannot be reclaimed. But an infringement which commenced under the original patent is not sanctioned by the surrender, and if it continues in the same or in another form after the grant of the reissue, an action may be instituted on the latter patent, and damages accruing since the date of the reissue be obtained.*" (Rob. on Pats., Vol. 2, sec. 699. Italics ours).

The doctrine of intervening rights is founded on the dedication to the public of something not covered by the original patent. In such cases the court holds that after the dedication has been acted upon by the public a reissue will not be enforced.

In *Stimpson vs. Westchester Railroad Co.*, 4 How., 379, this Court said (p. 401) :

" Now, it is plain that no prior use of the defective patent can authorize the use of the invention after the emanation of the renewed patent under the above section. To give to the patentee the fruits of his invention was the object of the provision ; and this object would be defeated if a right could be founded on a use subsequent to the original patent and prior to the renewed one.

* * * * *

" Now, any person using an invention protected by a new patent subsequent to the date of this Act is guilty of an infringement, however long he may have used the same after the date of the defective and surrendered patent."

See, also,

Battin vs. Taggart, 17 How., 74.

McWilliams Co. vs. Blundell, 11 Fed., 419.

The older cases show that the reissue privilege was abused. It became common to expand by reissue the claims of patents long after the grant to cover improvements and devices which had been developed by others who entered the field in good faith, and relying upon the disclosure of the patent. To check this abuse and conserve the rights of worthy defendants, this Court, in *Miller vs. Brass Company*, 104 U. S., 350, applied sharply the doctrine of equitable estoppel.

This decision caused it to be at first asserted that this Court had practically abolished the right of reissue. Examination of the authorities will show, however, that in every case in which a reissue has been declared invalid, the facts called for the application of equitable doctrines and maxims in order to preserve the rights of innocent and worthy defendants (*Eames v. Andrews, supra*).

No such facts are present in the case at bar. Petitioners did not enter the field with any improvement. They pirated plaintiffs' precise structure, in open defiance of the original patent and after plaintiffs had created the market. No

attempt was made to show, nor does a fact exist, indicating that these petitioners have any equitable right of any character whatever. They are pirates and, not denying their piracy, they ask this court for a narrow, technical, and, in view of the equities, an unwarrantable construction of the re-issue law, to permit them to escape with their booty.

THE RIGHT TO REISSUE IS NOT LOST BECAUSE JUDICIAL DECISION FIRST MAKES THE DEFECTS APPARENT.

Petitioners' brief asserts that the right to reissue was lost when Judge KOHLSAAT handed down his opinion, i. e., if the necessity for reissue first appears by a judicial decision, the patent cannot thereafter be corrected to make the invention more definite and certain. Such state of affairs is a reason for sustaining a reissue and not for invalidating it. Petitioners' brief cites no cases supporting its proposition.

Thomson vs. Wooster, 114 U. S., 104. This case came before this Court on appeal from an accounting after a decree *pro confesso*. The Court was asked to hold as a matter of law that the reissue patent involved was invalid, because it had been applied for fourteen years after granting the original, and because, prior to the reissue a number of suits had been brought upon it wherein the patent had been held valid, and a number of licenses taken under it. This Court specifically refused to so hold. For the Court's statement see Appendix.

Mathews v. Flower, 25 Fed., 830. This court held the original patent invalid (Mathews v. Machine Co., 105 U. S., 54), but intimated that it might have been sustained if more limited, whereupon the reissue was applied for. Judge, afterward Mr. Justice BROWN, held the reissue valid and infringed. Among other things, the defendants contended, as the court states (p. 831) :

"That patent No. 96,959, the original of the reissue in suit, has been declared void by the supreme court in the case of Mathews v. Machine Co., and consequently the complainants had no patent to amend when they applied for this reissue, and the same is void. * * * If defendants' propositions were sound, the whole provisions with respect to reissues would be nullified."

And later (p. 834) :

" The construction of the original claim was doubtful ; and we think that the patentee was not called upon to correct it until its meaning had been settled by the decision of the supreme court Walk. Pat. Par. 521 ; O'Reilly v. Morse, 15 How., 62, 121 ; Seymour v. McCormick, 19 How., 96, 106 ; Silsby v. Foote, 20 How., 378, 387."

Edison v. Am. Mutoscope Co., C. C. A. 2nd Cir., 151 Fed., 767. The original patent 589,168 had been held invalid by the Court of Appeals of the Second Circuit (Edison v. Mutoscope Co., 114 Fed., 926) Edison thereupon re-issued the patent and brought suit against the same defendant whereupon the Court sustained the re-issue.

See also Battin v. Taggart, 17 How., 77 ;
Hubel v. Waldie, 35 Fed., 414.

These authorities clearly demonstrate the unsoundness of petitioners' proposition.

Conclusion.

We submit that the following propositions are established :

1. The reissue was not obtained to cover any improvement made by petitioners or anyone else after the grant of the original patent, nor anything which had been dedicated to the public.

2. The reissue does not broaden the original invention. Claim 4 is narrowed and the changes made in the specification do not broaden but merely amplify the statements made in the original.

3. The patentee was the pioneer in the field of miners' acetylene cap lamps ; was the first to produce the lamp involved in this controversy, and built up his market thereon.

4. Petitioners have appropriated the precise construction of the original miners' cap lamp.

5. The invention is pioneer. The state of the art shows no lamp like it either in construction or principle of operation. The invention is, therefore, entitled to a full range

of equivalents, and as the bent and straight stirrer are identical in function a straight stirrer is within the original disclosure.

6. The specification, the original claims and the prior art make it clear that the original patent was not limited to a bent stirrer. Further to hold it so limited would allow an infringer to appropriate the invention and escape because he had substituted a straight for a bent stirrer, the function of the two stirrers being identical.

7. The reissue does not cover any combination denied the inventor by the Patent Office.

8. Petitioners, having come into the field with plaintiffs' precise lamp five years after it had been placed on the market and in defiance of the original patent, which had then been judicially declared valid, and infringed by a lamp like petitioners, have no intervening rights.

9. The reissue is not invalid because it was applied for after judicial decision making the defects of the original patent apparent.

10. Infringement is clear.

We submit that the decision of the Court of Appeals of the Second Circuit should be affirmed.

Respectfully,

JAMES Q. RICE,

Counsel for Respondents.

APPENDIX.

EAMES v. ANDREWS, 122 U. S., 40 :

This is one of the driven well cases. The original patent claimed the driving of a well by
 "forcing down a rod to and into the water under ground and withdrawing it and inserting a tube in its place."

The reissue claimed the driving of wells
 "by driving or forcing an instrument into the ground until it is projected into the water without removing the earth upward, as it is in boring."

Thus the reissue changed the process claimed by substituting the single step of driving an instrument for the two steps of forcing down the rod, withdrawing it and inserting the tube.

As to the changes in the specification the Court states :

"The precise objection to the reissued specification is that it states that the tube which is to replace the driven rod is 'made air tight throughout its length,' and also that in cases where the aid of a pump to draw the water from the well may be necessary, the patentee attaches 'to the tube by an air tight connection any known form of pump', and that the original specification does not state that the tube is made air tight throughout its length, nor that the pump is to be attached to the tube by an air tight connection, but only states that 'any suitable well known pump may be applied to raise the water up through the tube to the surrounding surface or above it.'"

The Court commenting on these objections, says :

"Here the amended specification does not enlarge the scope of the original invention as described in the original specification. It simply, in this respect, supplies a deficiency, by describing with more particularity and exactness the means to be employed to produce the desired result."

THOMSON v. WOOSTER, 114 U. S., 104 :

"The suits brought on the original patent may have been for infringements committed against particular parts of the invention, or modes of using it and putting it into operation, as to

which the specification was clear, full and sufficient ; whilst at the same time there may have been certain other parts of the invention, or modes of using it and putting it into operation, as to which the specification was defective or insufficient, and which were not noticed until the application for reissue was made ; or, in the original patent the patentee may have claimed as his own invention more than he had a right to claim as new—a mistake which might be corrected at any time. At all events, the court cannot say, as mere matter of law, that this might not have been the case."

Followed in *Clark v. Wooster*, 119 U. S., 322.

DIGEST OF CASES REFERRED TO IN OPINION OF THE COURT OF APPEALS, THIRD CIRCUIT :

Topliff vs. Topliff, 145 U. S., 156. The reissue was sustained and lapse of time did not enter into the case, the reissues having been applied for within a few months from the grant of the original patent.

Powder Co. vs. Powder Works, 98 U. S., 126. The reissue was held invalid because it was for a different invention.

Miller vs. Brass Co., 104 U. S., 350. The reissue was held invalid because it was not for the same invention as that of the original patent, and because there was no accident inadvertence or mistake, which as the Court said, "was not so obvious as to be instantly discernible on opening the letters patent." In this case, the Court discussed broadened reissues at length, but it is careful to state that where there is a delay, it must not be "unreasonable," and that the patentee must not "wait until other inventors have produced new forms of improvement.

James vs. Campbell, 104 U. S., 356. The reissue was held invalid because it was not for the same invention as that specified in the original. The question of lapse of time did not enter into the decision.

Coon vs. Wilson, 113 U. S., 268. The reissue was held invalid as being for a different invention from the original, although the reissue was applied for only about four months from the grant of the original patent. Manifestly, the lapse of time was not determinative.

In General Electric Co. vs. Richmond, 178 F. R., 84, lapse of time was not determinative, but the reissue was held invalid

as being for a different invention from that set forth in the original patent.

Railway Co. vs. Sayles, 97 U. S., 554, was not a reissue case. The case went off on the ground that the inventor had inserted new matter into his application while it was pending in the Patent Office, the effect of which would be "to interfere with other inventors who had entered the field."

Flower vs. City of Detroit, 127 U. S., 563. The reissue was held invalid because it was for a different invention from that originally set forth. The question of time was not determinative and entered into the decision only to the extent that the Court pointed out that during the eight years which had elapsed, structures produced by others had gone into public use which would be covered by the reissue.

ABERCROMBIE & FITCH COMPANY ET AL. v.
BALDWIN ET AL.

CERTIORARI TO THE CIRCUIT COURT OF APPEALS FOR THE
SECOND CIRCUIT.

No. 67. Argued November 19, 20, 1917.—Decided December 10, 1917.

The Baldwin patent, original No. 821,580, reissue No. 13,542, for improvements in acetylene gas generating lamps, *held* valid and infringed as to claim 4.

The patent relates to an acetylene gas generating lamp, with an upper reservoir for water and a lower receptacle for calcium carbide, connected by a tube, with a rod extending through the tube and subject to manipulation from above. The inventive features involved lie in securing a proper flow of the water through the tube and access for it to the unslaked carbide, the first, by adopting a comparatively large tube with a size of rod suitably restricting its capacity; the second, by manipulating the rod when necessary to break up slaked carbide at the mouth of the tube in the lower receptacle.

198.

Opinion of the Court.

Held, upon the evidence, that the invention is meritorious and entitled to invoke the doctrine of equivalents. *Paper Bag Patent Case*, 210 U. S. 405.

The original patent having figured the tube as extending to and embedded in the carbide, and described the rod as a means, when manipulated, of breaking up slaked carbide at the lower mouth of the tube, to permit the water to percolate to the unslaked carbide, *held*, that an amendment in the reissue explicitly describing the tube as so extended and embedded did not enlarge the patent.

In the original patent specification, the rod or "stirrer" was described as bent at the lower extremity, while the specification of the reissue declared, "it is obvious that the stirrer need not always be formed with a bent end." *Held*, that the reissue did not enlarge the original patent; the function of the rod as a "stirrer," clearly described in the original, is the same whether its end be bent or straight; the two forms are but interchangeable equivalents.

In the original patent proceedings the applicant was required to surrender a claim describing the rod as "extending from a point outside the lamp through the tube into the carbide receptacle." *Held*, on the evidence, that this was not a surrender of the straight form of stirring rod.

In view of the facts of the case, *held*, that one of the petitioners, which entered the field when the patent was unquestioned and after the patentee by his efforts had created an extensive market, acquired in equity no intervening rights against the patent as subsequently reissued.

228 Fed. Rep. 895, affirmed.

THE case is stated in the opinion.

Mr. James R. Offield, with whom *Mr. Charles K. Offield* was on the brief, for petitioners.

Mr. James Q. Rice for respondents.

MR. JUSTICE MCKENNA delivered the opinion of the court.

Suit for infringement of a patent embraced in letters patent No. 821,580 and a re-issue thereof, No. 13,542.

The suit was originally brought by Frederick E. Baldwin, patentee. John Simmons Company, licensee, having the exclusive right to manufacture and sell the patented device, subsequently intervened and became complainant.

The patents are for a lamp designed to generate and burn acetylene or similar gas "intended for use," to quote the description of the patents, "and adapted to use as a bicycle, automobile, yacht, or miner's lamp, or for any other analogous purpose, it being necessary only to change its form or dimensions to adapt it to any one of the purposes mentioned." Stress in this case, however, is put upon the use of the asserted invention as a miner's lamp, such use conspicuously displaying its commercial utility.

Answer was filed by the Justrite Manufacturing Company, which was made a party defendant to the suit as manufacturer of the asserted infringing lamp, and by stipulation its answer was considered the answer of the Abercrombie & Fitch Company. It denied invention with great detail, set up anticipating patents, denied its utility, attacked the validity of the re-issue on the ground that the 1st and 4th claims of the original patent were held invalid by the United States Circuit Court of Appeals for the Seventh Circuit, 199 Fed. Rep. 133, and for the further reason that the application for the re-issue was not made until seven years after the original letters patent were issued and rights had accrued in the meantime to defendants (petitioners here) and to others. Infringement was denied.

A decree was passed sustaining the validity of the original patent and of the re-issue, the originality of the invention and its utility and adjudging that defendants (petitioners) had infringed claim 4 of the re-issue, that plaintiffs recover the damages they had incurred by reason of the infringement and the profits defendants had received, an accounting being ordered for this purpose. A perpetual

injunction was also adjudged against further infringements. 227 Fed. Rep. 455. The decree was affirmed in all respects by the Circuit Court of Appeals, 228 Fed. Rep. 895, and subsequently this certiorari was granted.

The plaintiffs (we shall so designate respondents) struggled through some years and some litigation to the success of the decrees in the pending case. In a suit brought in the District Court for the Southern District of Illinois a device like that of the defendants herein was held to be an infringement of certain claims of the original patent. The holding was reversed by the Circuit Court of Appeals for the Seventh Circuit. *Bleser v. Baldwin*, 199 Fed. Rep. 133.

Subsequently, the re-issue having been granted, suit was brought in the Western District of Pennsylvania against an asserted infringer. Unfair competition was also alleged, and, holding the latter to exist, the court granted a preliminary injunction. 210 Fed. Rep. 560. Upon final hearing that holding was repeated, and infringement of a claim of the re-issue patent decreed. 215 Fed. Rep. 735. The decree was reversed by the Circuit Court of Appeals (Third Circuit) on the ground that the claim of the re-issue patent found to have been infringed was broader than a corresponding claim of the original letters patent and therefore void. The holding of the District Court as to unfair competition was sustained. 219 Fed. Rep. 735. Aided by the reasoning in the opinions of those cases and the discussion of counsel, we pass to the consideration of the propositions in controversy.

First, as to the original patent. Its contribution to the world's instrumentalities was, as we have said, an acetylene lamp and was represented by the following figure, designated as Figure 1.

It will be observed that the device consists of a receptacle divided into two compartments, an upper one for

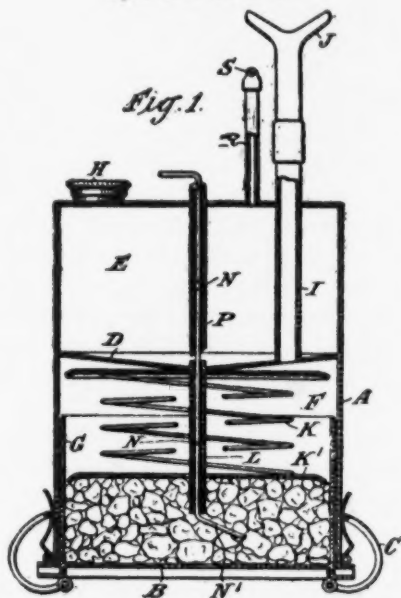


FIG. 1.

water and a lower one designed to serve as a gas-generating chamber, adapted to contain a receptacle for calcium carbide, which is attached to and forms the detachable bottom. There are means of introducing water into the reservoir and thence to the carbide and means of conducting the gas to the burner.

The device is a means of using the gas (acetylene) formed by the decomposition of water with calcium carbide and necessarily must bring them into contact in an effectual way and use the gas generated in a controlled flow. A tube (L) hence leads from the water reservoir into the carbide receptacle and forms a duct which introduces the water into the body of the carbide. Various means, the specifications recite, have been employed to regulate or control the flow of water to the carbide, which were found objectionable or not adequate.

The patentee then says that the method which he has invented "for securing the proper feed under all circumstances" without "objectionable features is to make the bore of the duct of comparatively large size and then restrict it by means of a wire or rod preferably centrally located therein to leave a channel of the proper size."

It is then said: "This arrangement is simple; but in a long experience it has been found to be entirely successful. It is possible to secure the correct drop-by-drop feed with a duct of considerable size, since the friction of the water on the large area of the tube-wall and wire reduces its flow. This retarding friction may be regulated by varying the size of wire used. The duct does not become choked, since if foreign particles are deposited therein the water can take a zigzag course around it without the supply being appreciably affected. If it is at any time necessary to clean the tube, the wire is simply reciprocated and rotated a few times from the outside of the lamp without disturbing the position of other parts. This nice regulation of the flow enables me to entirely dispense with the troublesome adjustment of the valve. . . . In some cases, however, there is employed in connection with the means for introducing the water into the mass of carbid a device in the nature of a stirrer, which on proper manipulation may be used to break up the mass of carbid surrounding the outlet of the water duct and which by having become slaked and caked by the action of water prevents the proper percolation of the latter to the unslaked carbid in the receptacle G, Fig. 1. As such device I employ a stem or rod N, which extends down through the tube L and is bent at substantially right angles to form an arm N'."

There is also a figure attached to the patent which shows a valve upon the constricting rod and it is said "this rod may form a prolongation of the valve stem . . . or in case no valve is used may extend from the top of the

lamp down through the water-reservoir," and this is illustrated by figures.

"As calcium carbid possesses strongly absorptive properties, the introduction of water through the tube L will result in the gradual slaking of the material about its outlet; but the lime thus produced becomes gradually less permeable to the water, so that an insufficient quantity of gas is generated to maintain the proper flame. When this becomes noticeable, the rod N is turned, so as to cause the arm N' to break up to a greater or less extent the mass of lime, and in practice I have found that under ordinary conditions this is amply sufficient to insure a substantially uniform generation of gas until all of the carbid in the receptacle G is exhausted."

There are some further descriptive details not necessary to be repeated, and this was said: "The specific construction of the various parts of my lamp may be, as will be seen from a consideration of the nature of the improvements, very greatly varied without departing from the invention."

The claims of the patent which are pertinent to our inquiry are as follows:

"1. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a tube extending from the former a considerable distance into the latter so as to be embedded in the mass of carbid contained in said receptacle, and a rod or stem extending through said tube into the carbid-receptacle and having its end formed as a stirrer to break up the slaked carbid around the outlet of the water-tube, as set forth.

"2. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a tube extending from the former into the latter so as to be embedded in the mass of carbid contained in the receptacle, a rod extending from a point outside of the

lamp through the tube and into the carbid-chamber and having its end bent to form a stirrer for breaking up the slaked carbid around the outlet of the water-tube, as set forth.

* * * * *

"4. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water-tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water-tube, and constituting a stirrer to break up slaked carbid around the outlet of the water-tube, *the rod operating to restrict and thus control the flow of water to the carbid*, as set forth."

The words in italics are the addition of the re-issue.

Whether the lamp exhibits invention, when both patents are considered, we shall discuss later. Our attention is more immediately challenged by the stress put upon other defenses, especially upon the contention that the patent is confined to a special form and, so confined, is not infringed; and that the extension of the patent by the re-issue is void. The controversy is, therefore, brought to a consideration of the original patent as added to or developed by the re-issue. And their comparison centers in the water-feeding duct or tube and its restriction by means of a wire or rod and the shape and use of the rod to pierce or stir the carbide. In the original patent, as we have seen, it was said that the invented method for securing a proper feed (flow of the water to the carbide) without certain specific objectionable features was "to make the bore of the duct of comparatively large size and then restrict it by means of a wire or rod preferably centrally located therein to leave a channel of the proper size." In the re-issue, after the words "comparatively large size," it was added—"extend the tube which forms the duct downward so that its end will be always em-

bedded in the carbid." In other words, the tube is explicitly described as extending to and its end embedded in the carbide, and this, it is contended, was an enlargement of the original patent.

The contention is untenable if there was in the original patent an implication of such length and termination of the tube, and we think there was. To conduct water to the carbide it necessarily had to extend to the carbide receptacle and as necessarily had to penetrate the carbide if the rod located in it, whether straight or bent, was to act "in the nature of a stirrer, which on proper manipulation" might "be used to break up the mass of carbid surrounding the outlet of the water duct," which is the purpose that the patent ascribes to it. And Fig. 1 shows such ending and embedding. It would be impossible otherwise to perform its function or secure the "proper percolation" of the water "to the unslaked carbid in the receptacle G, Fig. 1."

But there was another addition in the re-issue which, it is contended, enlarges the invention and assigns a new shape and function to the stirrer of the original. In the latter the rod is described as extending "from the top of the lamp down through the water-reservoir, as shown in Fig. 3." To this the re-issue adds:

"It will be understood from what has been said that the function of the stirrer is to break up, pierce or disturb the particles of the slaked carbid mass which, when the lamp is in use, forms at the delivery end of the tube. This slaked carbid mass tends to solidify and either shuts the water off altogether or restricts it so that less water is delivered from the water tube than the lamp demands for efficient operation. As it is sufficient, under certain circumstances, to insure the requisite water flow by so manipulating the stirrer, as to pierce, break up, or loosen the slaked carbid mass immediately around or at the mouth of the tube, it is obvious that the stirrer need not

always be formed with a bent end or so as to extend radially from the mouth of the tube."

There is nothing in this but what was clearly implied in the original, except the shape of the stirrer. In the original it is described and represented as bent. In the re-issue it is stated to be obvious that the stirrer need not always be bent "or extend radially from the mouth of the tube."

We are unable to assign to this the extent of alteration that counsel do, nor do we think it necessary to rehearse the details of their argument. We have given it attention and the cases it cites, especially the decision and reasoning of the Circuit Court of Appeals for the Third Circuit in *Grier Bros. Co. v. Baldwin*, 219 Fed. Rep. 735, but we are constrained to a different conclusion. Indeed, we are of opinion that the original patent did not need the exposition of the re-issue. It exhibited an invention of merit, certainly one entitled to invoke the doctrine of equivalents. *Paper Bag Patent Case*, 210 U. S. 405. Baldwin, the patentee, complied with the statute (§ 4888, Rev. Stats.) by explaining the principle of his invention and the mode of putting it to practical use; there was a clear exposition of the principle and the instruments of its use were defined and their purpose and manner of operation. It left nothing in either for further experiment or contrivance. As we have said, the invention was a means of using the gas formed by the decomposition of water with calcium carbide, and necessarily the water and carbide must be brought into contact and under a controlled flow; hence the tube and its centrally located rod extending downward to the carbide. It was foreseen and stated that the carbide might become torpid or slaked by the action of the water and might have to be disturbed or dispersed in order that there might be percolation of water to unslaked carbide, and this was provided to be performed by a simple manipulation of the

rod. Whether the rod was bent or made straight was unimportant. In either form it removed the slake and secured the continuous operation of the water and carbide and through them the formation of the gas and its illuminating purpose. One or the other might be better, according to the extent of the dispersion required, and one naturally suggested the other.

It is, however, contended that plaintiffs were required to give up and did give up in the Patent Office a claim which had the extent which we have indicated. A claim, numbered in the application as 6, described the rod as: "A rod extending from a point outside the lamp through the tube into the carbide receptacle."

Counsel say, "It is to be particularly noted" that while other claims "mentioned the stirring function of the rod, claim 6 omitted this feature," but that the solicitor who drew the claim "unquestionably had in mind the straight form of rod construction without any stirrer at the end, for the claim specifies 'through the tube into the carbide receptacle.'" It is hence argued that when the claim was given up the straight form of construction was given up, and, having been given up to secure the patent, it cannot be insisted upon to prevent its use by others. But counsel is in error as to the extent of the surrender. The straight construction was not given up, but such construction through the tube into the carbide receptacle, and this was in deference, and only in deference, to other patents that showed such use, that is, showed a penetration into the receptacle but not its duct ending and embedded in the carbide.

We do not think the case calls for extended discussion. It is best considered in broad outline. The scope and merit of the patents are of instant and assured impression, and to the attempt to defeat or limit their invention by the state of the prior art we adduce the discussion and reasoning of the opinions of the lower courts, which we approve.

The denial of infringement is also easily disposed of. Indeed, it has been in effect disposed of. It is based on the contention that the stirrer is an essential of plaintiff's lamp and that a stirrer is absent from defendants' lamp, which is in all other particulars, as far as this case is concerned, similar to the plaintiff's lamp. To the contention of defendants, therefore, we cannot assent. There is a stirrer in both, and its form, as we have seen, is not of the essence of the invention. There is nothing occult in the act of stirring; it is causing movement or disturbance, and this may be performed by a straight rod as by a bent one. There may be difference in their dispersing power, but no difference in function, and one or the other would be instantly selected according to the need, under the clear description of the patent. This ready adaptation of the form of stirrer to the work to be performed Baldwin demonstrated even before the grant of the patent. Early in 1906 he put upon the market a lamp with a straight rod, "which, among other things," as the District Court has said, "has characterized the commercial lamp ever since."

To the contention that the Justrite Company, the manufacturing defendant, acquired rights before the re-issue we again may oppose the reasoning and conclusion of District Judge Mayer and their affirmance by the Circuit Court of Appeals. The learned judge said: "It will be remembered that this company entered the field with its lamp at a time when the validity and scope of the Baldwin patent were still unquestioned and when after some five years of capable effort, the Baldwin lamp had created an extensive market. The Justrite Company took its chances and, in view of the necessities of the situation, it is relieved of all accountability for the period prior to the granting of the reissue patent; but when the reissue was granted the Justrite Company again took its chances.

"By the reissuance of the patent, the patentee loses all in the way of an accounting under the original patent,

but the dominant purpose of the reissue statute was to save to the inventor the future remaining after the reissue.

"I see nothing in the course of plaintiffs or defendants which would allow a court of equity to conclude that defendants are to be relieved because of intervening rights."

Decree affirmed.
